



SEQUENCE LISTING

<110> Falco, S. Carl
Allen, Stephen M.

#4

<120> Plant Amino Acid Biosynthetic Enzymes

<130> BB1116 US CIP

<140> 09/931,457

<141> 2001-08-16

<150> 09/424,976

<151> 1999-12-02

<150> 60/065,385

<151> 1997-11-12

<150> 60/049,406

<151> 1997-06-12

<160> 72

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<210> 1

<211> 826

<212> DNA

<213> Oryza sativa

<400> 1

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| gctggggctg | cgcccatgga | agaactcaaa | cttcaaactc | aagaggtctt | ggcggggaaa | 120 |
| gcaccaacat | gcaacatttt | cagtcagcag | tatgctttta | atatattttc | acataatgca | 180 |
| ccaattgttg | aaaatgggta | caatgaggag | gagatgaaga | tggtgaagga | gaccagaaaa | 240 |
| atctggaatg | ataaagatgt | gaaggtaact | gcaacctgca | tacgagttcc | tgtgatgcgt | 300 |
| gcacatgctg | aaagtgtgaa | tctacagttt | gaaaagccac | ttgatgagga | tactgcaagg | 360 |
| gaaatcttga | gggcagctga | aggtgttacc | attattgatg | accgtgcttc | caatcgcttc | 420 |
| cccacacctc | ttgaggtatc | ggataaagat | gatgtagcag | tggttagaat | tcgtcaggat | 480 |
| ttgtcgcaag | atgataacaa | agggctggac | atatttggtt | gtggagatca | aatacgtaaa | 540 |
| ggtgctgcac | tcaatgctgt | gcagattgct | gaaatgctac | tcaagtgatt | ttcttttctg | 600 |
| tacctttctc | tccttgcccc | tctttgctct | agtcattggt | tgacggatgt | actctgggta | 660 |
| gatatgagatc | aattttgatc | atcttttgta | atctatatcc | ctagtgaat | aaatgtaaaa | 720 |
| cggttttgct | ctatcttctg | cacaagtgt | gaagaaatct | gaaattggga | aattggagtg | 780 |
| tggcccttgt | tcaaaaaaaaa | aaaaaaaaaaa | aaaaaaaaaaa | aaaaaa | | 826 |

<210> 2

<211> 195

<212> PRT

<213> Oryza sativa

<400> 2

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Tyr | Arg | His | Ala | Lys | Val | Val | Arg | Met | Val | Val | Ser | Thr | Tyr | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Ser | Gly | Ala | Gly | Ala | Ala | Ala | Met | Glu | Glu | Leu | Lys | Leu | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Glu | Val | Leu | Ala | Gly | Lys | Ala | Pro | Thr | Cys | Asn | Ile | Phe | Ser |
| | | | | 35 | | | 40 | | | | | 45 | | | |

Gln Gln Tyr Ala Phe Asn Ile Phe Ser His Asn Ala Pro Ile Val Glu
 50 55 60
 Asn Gly Tyr Asn Glu Glu Glu Met Lys Met Val Lys Glu Thr Arg Lys
 65 70 75 80
 Ile Trp Asn Asp Lys Asp Val Lys Val Thr Ala Thr Cys Ile Arg Val
 85 90 95
 Pro Val Met Arg Ala His Ala Glu Ser Val Asn Leu Gln Phe Glu Lys
 100 105 110
 Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile Leu Arg Ala Ala Glu Gly
 115 120 125
 Val Thr Ile Ile Asp Asp Arg Ala Ser Asn Arg Phe Pro Thr Pro Leu
 130 135 140
 Glu Val Ser Asp Lys Asp Asp Val Ala Val Gly Arg Ile Arg Gln Asp
 145 150 155 160
 Leu Ser Gln Asp Asp Asn Lys Gly Leu Asp Ile Phe Val Cys Gly Asp
 165 170 175
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 Leu Leu Lys
 195

<210> 3
 <211> 875
 <212> DNA
 <213> Triticum aestivum

<400> 3
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 agaggctcttg gaaggaaaagc caccaacctg taacattttc agtcaacagt atgcttttaa 180
 tatattttcg cataatgcac ctattgttga aaatggctat aatgaggaag agatgaaaat 240
 ggtgaaggag accagaaaaa tctggaatga caaggatgta agagtaactg caacttgtat 300
 acgggttcct acgatgcgcg cgcatgccga aagcgtgaat ctacagtttg aaaagccact 360
 tgatgaggac actgccagag aaatcttgag ggcagctcct ggtgttacca ttagtgacga 420
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 tggtaggatt cgccaggact tgtcacaaga tgataacaga gggttggagt tatttgtctg 540
 tggagaccag atacgtaaag gcgcgcgcgt gaacgctgtg cagattgctg aaatgctact 600
 gaagtgaccg cttttttacc attgtctcat gtgccacgtt gctctatcca ttgatggatt 660
 gatgtactct agtcactttc aaccagttt tggctgcgtg cttttttgta atctgtcaac 720
 ctacgagaag aagtgtgaag cgggcttttag tcatctgttg cacacaaaag tgcagccaca 780
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<210> 4
 <211> 201
 <212> PRT
 <213> Triticum aestivum

<400> 4
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 1 5 10 15

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Ser | Thr | Tyr | Gln | Ala | Ala | Ser | Gly | Ala | Gly | Ala | Ala | Ala | Met |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Glu | Glu | Leu | Lys | Leu | Gln | Thr | Arg | Glu | Val | Leu | Glu | Gly | Lys | Pro | Pro |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Thr | Cys | Asn | Ile | Phe | Ser | Gln | Gln | Tyr | Ala | Phe | Asn | Ile | Phe | Ser | His |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Asn | Ala | Pro | Ile | Val | Glu | Asn | Gly | Tyr | Asn | Glu | Glu | Glu | Met | Lys | Met |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Val | Lys | Glu | Thr | Arg | Lys | Ile | Trp | Asn | Asp | Lys | Asp | Val | Arg | Val | Thr |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ala | Thr | Cys | Ile | Arg | Val | Pro | Thr | Met | Arg | Ala | His | Ala | Glu | Ser | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asn | Leu | Gln | Phe | Glu | Lys | Pro | Leu | Asp | Glu | Asp | Thr | Ala | Arg | Glu | Ile |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Leu | Arg | Ala | Ala | Pro | Gly | Val | Thr | Ile | Ser | Asp | Asp | Arg | Ala | Ala | Asn |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| Arg | Phe | Pro | Thr | Pro | Leu | Glu | Val | Ser | Asp | Lys | Asp | Asp | Val | Ser | Val |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Gly | Arg | Ile | Arg | Gln | Asp | Leu | Ser | Gln | Asp | Asp | Asn | Arg | Gly | Leu | Glu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Leu | Phe | Val | Cys | Gly | Asp | Gln | Ile | Arg | Lys | Gly | Ala | Ala | Leu | Asn | Ala |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Val | Gln | Ile | Ala | Glu | Met | Leu | Leu | Lys | | | | | | | |
| | | 195 | | | | | 200 | | | | | | | | |

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 <212> DNA
 <213> Glycine max

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<220>
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cacctcctcc tctcctcca ggatccgaat gtccctccgc gagaacggcc cctccatcgc 180
cgtcgtgggc gtcaccggcg ccgtcggcca ngagtctctc tccgtcctct ccgaccgcga 240
cttcccttac cgctccattc atatgctggc ttccaagcgc tccgtcggac gccgcacac 300
cttcgaggac agggactacn tcttcaggag ctcacgccgg agagtccgac ggtgtcgaca 360
tcgcgctctt cagcgcnggg ggtccatcaa nnaagcattc ggaccatcgn cgtaaatacgn 420
gggacggncg tngncaanat anctccggtt ncctttg 457

<210> 6
<211> 86
<212> PRT
<213> Glycine max

<400> 6
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1 5 10 15
Leu Pro Ala Arg Pro Lys Pro Thr Ser Ser Ser Ser Arg Ile Arg

| | | | | | | | |
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| tttggactct | atcaagtc | at | acccgaatga | aatcaaactc | gttgggtgttc | attgccatct | 300 |
| gggatctact | attacaaagg | tt | gatataatt | cagagatgct | gcagttctta | tgctgaatta | 360 |
| tgtcgatgaa | attcgagcac | aagg | tttttaa | gttggagtag | ctgaatatcg | gaggtgggtt | 420 |
| gggaatagat | taccatcata | ccgatgcag | cttacctaca | cctatggatc | tcatcaacac | | 480 |
| tgtgcgagaa | ttagttctct | ctcaagatct | cactcttatt | attgaacccg | gaagatcctt | | 540 |
| gattgcta | acttgctgct | tcgtcaatag | agtaactgg | gttaaatact | atggtacaaa | | 600 |
| gaatttcatt | gttgttgatg | gcagcatggc | agaactcatc | agacctagtc | tgtagggagc | | 660 |
| ataccagcat | atcgaactgg | tctctcccc | cactcctgg | gctgaagcag | cgaccttcga | | 720 |
| tattgttgga | ccagtttgtg | agtctgcaga | tttccttgga | aaagataggg | aacttccaac | | 780 |
| acctgatgag | ggagctggac | tggttggttca | tgatgcaggt | gcctactgca | tgagcatggc | | 840 |
| ttccacctac | aacctgaagt | tgaggccacc | ggaatactgg | gtggaagcgg | acggttcgat | | 900 |
| cgттаagatc | aggcatggag | agaagcttga | tgactacatg | aagttctttg | atggctcttc | | 960 |
| tgcttagatg | tttattatct | gcgactgcta | cggacgatgt | tttcttgggg | ataattggat | | 1020 |
| tttctttgtc | aaaaaaaaa | aaaaaaaaa | aaaa | | | | 1054 |

<210> 9
 <211> 321
 <212> PRT
 <213> Zea mays

<400> 9
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 Val Arg Ala Ala Arg Ala Thr Gly Lys Lys Val Pro Val Leu Leu Arg
 35 40 45
 Ile Asn Pro Asp Val Asp Pro Gln Val His Pro Tyr Val Ala Thr Gly
 50 55 60
 Asn Lys Thr Ser Lys Phe Gly Ile Arg Asn Glu Lys Leu Gln Trp Phe
 65 70 75 80
 Leu Asp Ser Ile Lys Ser Tyr Pro Asn Glu Ile Lys Leu Val Gly Val
 85 90 95
 His Cys His Leu Gly Ser Thr Ile Thr Lys Val Asp Ile Phe Arg Asp
 100 105 110
 Ala Ala Val Leu Met Leu Asn Tyr Val Asp Glu Ile Arg Ala Gln Gly
 115 120 125
 Phe Lys Leu Glu Tyr Leu Asn Ile Gly Gly Gly Leu Gly Ile Asp Tyr
 130 135 140
 His His Thr Asp Ala Val Leu Pro Thr Pro Met Asp Leu Ile Asn Thr
 145 150 155 160
 Val Arg Glu Leu Val Leu Ser Gln Asp Leu Thr Leu Ile Ile Glu Pro
 165 170 175
 Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe Val Asn Arg Val Thr
 180 185 190
 Gly Val Lys Ser Asn Gly Thr Lys Asn Phe Ile Val Val Asp Gly Ser
 195 200 205
 Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Gly Ala Tyr Gln His Ile

| | | |
|---|-----|---------|
| 210 | 215 | 220 |
| Glu Leu Val Ser Pro Pro Thr Pro Gly Ala Glu Ala Ala Thr Phe Asp | | |
| 225 | 230 | 235 240 |
| Ile Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp Arg | | |
| | 245 | 250 255 |
| Glu Leu Pro Thr Pro Asp Glu Gly Ala Gly Leu Val Val His Asp Ala | | |
| | 260 | 265 270 |
| Gly Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Leu Arg | | |
| | 275 | 280 285 |
| Pro Pro Glu Tyr Trp Val Glu Ala Asp Gly Ser Ile Val Lys Ile Arg | | |
| | 290 | 295 300 |
| His Gly Glu Lys Leu Asp Asp Tyr Met Lys Phe Phe Asp Gly Leu Pro | | |
| 305 | 310 | 315 320 |

Ala

<210> 10
 <211> 1813
 <212> DNA
 <213> Zea mays

<400> 10

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| cgcttcctgg | aaggctggaa | cagaaagaac | cctaaaccct | agcaatggcg | gcggcgaacc | 60 |
| tgctgtcgcg | ctcccttctc | cccaccccaa | acactatccg | aacgagccac | cccaccccg | 120 |
| ggagcccagc | cgctgtctcc | ttcccccgcc | gccgtgcccc | cctgtccctg | tgcgccctccg | 180 |
| tctccatggc | ctccccgtcc | ccaccgccac | agcccccgcc | ggccggcgctg | ccgaagcact | 240 |
| gcttccggcg | cgcgcccgac | ggctacctgt | actgcgaggg | agtgaggggtg | gaagacgcga | 300 |
| tgggcgctgc | cgagcgcagc | cccttctatc | tctacagcaa | gcttcagatc | ctccgcaact | 360 |
| tcgcccgtta | ccgcgacgct | ctccaggggc | tcgctcccat | cgtcgggtat | gccgtgaagg | 420 |
| ccaacaataa | cctccccgtg | ctacgcgtcc | tgctgagct | tggtgcggc | gccgtcctcg | 480 |
| tcagcggcaa | cgagctccga | ctcgccctcc | aggcgggatt | cgacccccgc | aggtgtatat | 540 |
| ttaacggaaa | tgggaagaca | ctcgaagatc | ttaaattggc | tgctgagagt | ggagtatttg | 600 |
| taaatgtgga | tagtgaattt | gatttagaga | atattgtcag | agctgcaaga | gctactggaa | 660 |
| agaaagtgcc | tgttttactt | agaataaatc | cagatgtgga | tccacaggta | catccatatg | 720 |
| ttgccacggg | aaataaaaaca | tccaaattcg | ggatccgcaa | tgagaaattg | caatggtttt | 780 |
| tgaactctat | caagtcatac | tcgaatgaaa | tcaaactcgt | tggtgttcac | tgccatctgg | 840 |
| gatctactat | tacaaagggt | gatataattc | gagatgctgc | agtgccttatg | gtgaattatg | 900 |
| tcgatgaaat | tcgagcacia | ggtttttaagt | tgagtagcct | gaatattgga | ggtggtttgg | 960 |
| gaatagatta | ccatcatacc | gatgcagtct | tacctacacc | tatggatctc | atcaacactg | 1020 |
| tacgagaatt | agttctctct | caagatctta | ctcttattat | tgaacctgga | agatccttga | 1080 |
| ttgctaatac | ttgctgcttc | gtcaatagag | taactgggtg | taaatcta | ggtacaaaga | 1140 |
| atttcattgt | tggtgatggc | agcatggcag | aactcatcag | acctagcctg | tatggagcat | 1200 |
| atcagcatat | cgaattgggtc | tctcccccca | ctcctgggtg | tgaagtagcg | accttcgata | 1260 |
| ttggtggggc | agtttgtgag | tctgcagatt | tccttgga | agatagggaa | cttccaacac | 1320 |
| ctgatgaggg | agctggactg | gttgttcacg | atgcaggtgc | ctactgcacg | agcatggcct | 1380 |
| ccacctacaa | cctgaagttg | aggccgcccag | agtactgggt | tgaagaggat | ggttcgattg | 1440 |
| ttaagatcag | gcataagag | aagctcgatg | actacatgaa | gttctttgat | ggtcttcctg | 1500 |
| cttagatgtt | tatttgtgac | tgctaggggc | gatgttttct | tgagataat | tgaatttttc | 1560 |
| tttgtcaagc | tcattttgct | ttcttgtggt | tggtatggaa | tggtactgga | tactggatag | 1620 |
| ttagttcggc | ctgtaggcgt | atcctcctga | acttacctct | cattgctgtt | agttttggca | 1680 |
| ccaagtttgt | tcccaattgc | tatttacgga | agttattgca | ttaaagggtg | tttggttgta | 1740 |
| atcttcccg | aagaataaga | tgcattgttt | tgagttaaaa | aagggggggc | ccggtaccca | 1800 |
| attcgcccta | tag | | | | | 1813 |

<210> 11
 <211> 486
 <212> PRT
 <213> Zea mays

<400> 11
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 Phe Pro Arg Arg Arg Ala Arg Leu Ser Val Cys Ala Ser Val Ser Met
 35 40 45
 Ala Ser Pro Ser Pro Pro Pro Gln Pro Ala Ala Ala Gly Val Pro Lys
 50 55 60
 His Cys Phe Arg Arg Gly Ala Asp Gly Tyr Leu Tyr Cys Glu Gly Val
 65 70 75 80
 Arg Val Glu Asp Ala Met Ala Ala Ala Glu Arg Ser Pro Phe Tyr Leu
 85 90 95
 Tyr Ser Lys Leu Gln Ile Leu Arg Asn Phe Ala Ala Tyr Arg Asp Ala
 100 105 110
 Leu Gln Gly Leu Arg Ser Ile Val Gly Tyr Ala Val Lys Ala Asn Asn
 115 120 125
 Asn Leu Pro Val Leu Arg Val Leu Arg Glu Leu Gly Cys Gly Ala Val
 130 135 140
 Leu Val Ser Gly Asn Glu Leu Arg Leu Ala Leu Gln Ala Gly Phe Asp
 145 150 155 160
 Pro Ala Arg Cys Ile Phe Asn Gly Asn Gly Lys Thr Leu Glu Asp Leu
 165 170 175
 Lys Leu Ala Ala Glu Ser Gly Val Phe Val Asn Val Asp Ser Glu Phe
 180 185 190
 Asp Leu Glu Asn Ile Val Arg Ala Ala Arg Ala Thr Gly Lys Lys Val
 195 200 205
 Pro Val Leu Leu Arg Ile Asn Pro Asp Val Asp Pro Gln Val His Pro
 210 215 220
 Tyr Val Ala Thr Gly Asn Lys Thr Ser Lys Phe Gly Ile Arg Asn Glu
 225 230 235 240
 Lys Leu Gln Trp Phe Leu Asn Ser Ile Lys Ser Tyr Ser Asn Glu Ile
 245 250 255
 Lys Leu Val Gly Val His Cys His Leu Gly Ser Thr Ile Thr Lys Val
 260 265 270
 Asp Ile Phe Arg Asp Ala Ala Val Leu Met Val Asn Tyr Val Asp Glu
 275 280 285
 Ile Arg Ala Gln Gly Phe Lys Leu Glu Tyr Leu Asn Ile Gly Gly Gly

| | | | | |
|---|-----|-----|-----|---------|
| 290 | | 295 | | 300 |
| Leu Gly Ile Asp Tyr His His Thr Asp Ala Val Leu Pro Thr Pro Met | | | | |
| 305 | | 310 | | 315 320 |
| Asp Leu Ile Asn Thr Val Arg Glu Leu Val Leu Ser Gln Asp Leu Thr | | | | |
| | 325 | | 330 | 335 |
| Leu Ile Ile Glu Pro Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe | | | | |
| | 340 | | 345 | 350 |
| Val Asn Arg Val Thr Gly Val Lys Ser Asn Gly Thr Lys Asn Phe Ile | | | | |
| | 355 | | 360 | 365 |
| Val Val Asp Gly Ser Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Gly | | | | |
| | 370 | | 375 | 380 |
| Ala Tyr Gln His Ile Glu Leu Val Ser Pro Pro Thr Pro Gly Ala Glu | | | | |
| 385 | | 390 | | 395 400 |
| Val Ala Thr Phe Asp Ile Val Gly Pro Val Cys Glu Ser Ala Asp Phe | | | | |
| | 405 | | 410 | 415 |
| Leu Gly Lys Asp Arg Glu Leu Pro Thr Pro Asp Glu Gly Ala Gly Leu | | | | |
| | 420 | | 425 | 430 |
| Val Val His Asp Ala Gly Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr | | | | |
| | 435 | | 440 | 445 |
| Asn Leu Lys Leu Arg Pro Pro Glu Tyr Trp Val Glu Glu Asp Gly Ser | | | | |
| | 450 | | 455 | 460 |
| Ile Val Lys Ile Arg His Glu Glu Lys Leu Asp Asp Tyr Met Lys Phe | | | | |
| 465 | | 470 | | 475 480 |
| Phe Asp Gly Leu Pro Ala | | | | |
| | 485 | | | |

<210> 12
 <211> 1116
 <212> DNA
 <213> *Oryza sativa*

| | | | | | |
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| tgcgagagtt | gctgggaaga | aagtccctgt | tttgtctcagg | ataaaccag | atgtggatcc 120 |
| acaggtccat | ccttatgttg | cgactggaaa | caaaacctcc | aaatttggtg | tccgtaatga 180 |
| gaaactacaa | tggttcttag | actctatcaa | gtcatactca | aatgatata | cactgggtggg 240 |
| tggttcattgt | catctgggat | ctaccattac | aaaggtcgat | atatttagag | atgcggcagg 300 |
| tcttatgggtg | aattatgttg | atgaaattcg | agcacaagg | tttgaactgg | aatatctcaa 360 |
| tattggcggg | ggcctgggca | tagwttatca | ccacacggat | gcagtcttgc | ctacacctat 420 |
| gggacctcat | caacactgtg | ccgaagaatt | agttctgtca | cgagatctta | cactcatcat 480 |
| tgaacctggg | agatccctca | tagctaacac | ttgctgcttc | gtcaatagg | tactgggtgt 540 |
| taaatcta | ggtacaaaga | atttcattgt | agttgatggc | agcatggcag | agcttatcag 600 |
| accaagtcta | tatggagcat | accagcatat | cgaactgggt | tctccttccc | cagatgcaga 660 |
| agtagcaaca | ttcgatattg | ttggaccagt | ttgtgaatct | gcagatttcc | ttggcaaaga 720 |
| cagggaactt | ccaacacctg | ataagggagc | tggtttgggtg | gttcattgacg | caggagccta 780 |
| ctgcatgagc | atggcttcaa | cctacaactt | gaagttgcga | ccacctgaat | attgggtaga 840 |
| agatgatggg | tccattgcta | agattcggcg | tggagagtca | tttgatgact | acatgaagtt 900 |
| ctttgataat | ctctctgect | aactcgtttt | cctgcaattg | taataagatt | tttctcttgt 960 |
| tatgtgtggc | tgtatcagga | ttcggattga | tagcgcagta | cagtttgctg | tagaatcgggt 1020 |

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 tttgctacag gacacttaaa aaaaaaaaaa aaaaaa 1116

<210> 13
 <211> 306
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (128)
 <223> Xaa = ANY AMINO ACID

<400> 13
 Leu His Gly Val Phe Val Asn Ile Asp Ser Glu Phe Asp Leu Glu Asn
 1 5 10 15
 Ile Val Thr Ala Ala Arg Val Ala Gly Lys Lys Val Pro Val Leu Leu
 20 25 30
 Arg Ile Asn Pro Asp Val Asp Pro Gln Val His Pro Tyr Val Ala Thr
 35 40 45
 Gly Asn Lys Thr Ser Lys Phe Gly Ile Arg Asn Glu Lys Leu Gln Trp
 50 55 60
 Phe Leu Asp Ser Ile Lys Ser Tyr Ser Asn Asp Ile Thr Leu Val Gly
 65 70 75 80
 Val His Cys His Leu Gly Ser Thr Ile Thr Lys Val Asp Ile Phe Arg
 85 90 95
 Asp Ala Ala Gly Leu Met Val Asn Tyr Val Asp Glu Ile Arg Ala Gln
 100 105 110
 Gly Phe Glu Leu Glu Tyr Leu Asn Ile Gly Gly Gly Leu Gly Ile Xaa
 115 120 125
 Tyr His His Thr Asp Ala Val Leu Pro Thr Pro Met Gly Pro His Gln
 130 135 140
 His Cys Ala Glu Glu Leu Val Leu Ser Arg Asp Leu Thr Leu Ile Ile
 145 150 155 160
 Glu Pro Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe Val Asn Arg
 165 170 175
 Val Thr Gly Val Lys Ser Asn Gly Thr Lys Asn Phe Ile Val Val Asp
 180 185 190
 Gly Ser Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Gly Ala Tyr Gln
 195 200 205
 His Ile Glu Leu Val Ser Pro Ser Pro Asp Ala Glu Val Ala Thr Phe
 210 215 220
 Asp Ile Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp
 225 230 235 240
 Arg Glu Leu Pro Thr Pro Asp Lys Gly Ala Gly Leu Val Val His Asp
 245 250 255

Ala Gly Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Leu
 260 265 270

Arg Pro Pro Glu Tyr Trp Val Glu Asp Asp Gly Ser Ile Ala Lys Ile
 275 280 285

Arg Arg Gly Glu Ser Phe Asp Asp Tyr Met Lys Phe Phe Asp Asn Leu
 290 295 300

Ser Ala
 305

<210> 14
 <211> 968
 <212> DNA
 <213> Glycine max

<400> 14
 gttgccactg ggaataagaa ctctaaattt ggcattagaa atgagaagct gcagtgcctt 60
 ttagatgcag tgaaggaaca tcctaatgag ctcaaacttg taggggccca ctgccatctt 120
 gggttcaacaa ttaccaaggt tgacattttc agggatgcag ccaccattat gatcaactac 180
 attgaccaaaa tccgagatca gggttttgaa gttgattact taaatattgg tggaggactt 240
 gggatagatt attatcattc tggtgccatc cttcctacac ctagagatct cattgacact 300
 gtacgagatc ttgttatttc acgtggtcct aatctcatca ttgaaccagg aagatcactc 360
 attgcaaaca cgtgttgctt agttaaccgg gtgacagggtg ttaaaactaa tggatctaaa 420
 aacttcattg taattgatgg aagtatggct gaacttatcc gccctagtct ttatgatgct 480
 taccagcata tagagctggg ttcccctgcc ccgtcaaag ctgaaacaga aacttttgat 540
 gtgggtggcc ctgtctgtga gtctgcagat ttcttaggaa aaggaagaga acttcctact 600
 ccagccaagg gtactggttt gggtgttcat gatgctgggt cttattgcat gagcatggca 660
 tcaacctaca atctaaagat gcggcctcct gagtattggg ttgaagatga tggatcagtg 720
 agcaaaataa gacatggaga gacttttgaa gaccacattc ggttttttga ggggctttga 780
 gctaataatt tatcttgtag gaaagaaggc tggagaattg ttatgtactt ggagtttgaa 840
 tctttcctcg tcaatgaatg catgactcct gtagtctctg ttcttccgtt ctaattgaat 900
 gttgactccc atgacaggaa cagagaataa agttgatttc agttagattt aaaaaaaaaa 960
 aaaaaaaaaa 968

<210> 15
 <211> 259
 <212> PRT
 <213> Glycine max

<400> 15
 Val Ala Thr Gly Asn Lys Asn Ser Lys Phe Gly Ile Arg Asn Glu Lys
 1 5 10 15
 Leu Gln Cys Phe Leu Asp Ala Val Lys Glu His Pro Asn Glu Leu Lys
 20 25 30
 Leu Val Gly Ala His Cys His Leu Gly Ser Thr Ile Thr Lys Val Asp
 35 40 45
 Ile Phe Arg Asp Ala Ala Thr Ile Met Ile Asn Tyr Ile Asp Gln Ile
 50 55 60
 Arg Asp Gln Gly Phe Glu Val Asp Tyr Leu Asn Ile Gly Gly Gly Leu
 65 70 75 80
 Gly Ile Asp Tyr Tyr His Ser Gly Ala Ile Leu Pro Thr Pro Arg Asp

| 85 | | | | | 90 | | | | | 95 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ile | Asp | Thr | Val | Arg | Asp | Leu | Val | Ile | Ser | Arg | Gly | Leu | Asn | Leu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Ile | Ile | Glu | Pro | Gly | Arg | Ser | Leu | Ile | Ala | Asn | Thr | Cys | Cys | Leu | Val |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asn | Arg | Val | Thr | Gly | Val | Lys | Thr | Asn | Gly | Ser | Lys | Asn | Phe | Ile | Val |
| | | 130 | | | | 135 | | | | | 140 | | | | |
| Ile | Asp | Gly | Ser | Met | Ala | Glu | Leu | Ile | Arg | Pro | Ser | Leu | Tyr | Asp | Ala |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Tyr | Gln | His | Ile | Glu | Leu | Val | Ser | Pro | Ala | Pro | Ser | Asn | Ala | Glu | Thr |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Glu | Thr | Phe | Asp | Val | Val | Gly | Pro | Val | Cys | Glu | Ser | Ala | Asp | Phe | Leu |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Lys | Gly | Arg | Glu | Leu | Pro | Thr | Pro | Ala | Lys | Gly | Thr | Gly | Leu | Val |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Val | His | Asp | Ala | Gly | Ala | Tyr | Cys | Met | Ser | Met | Ala | Ser | Thr | Tyr | Asn |
| | | 210 | | | | 215 | | | | | 220 | | | | |
| Leu | Lys | Met | Arg | Pro | Pro | Glu | Tyr | Trp | Val | Glu | Asp | Asp | Gly | Ser | Val |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Ser | Lys | Ile | Arg | His | Gly | Glu | Thr | Phe | Glu | Asp | His | Ile | Arg | Phe | Phe |
| | | | | 245 | | | | | 250 | | | | | 255 | |

Glu Gly Leu

<210> 16
 <211> 676
 <212> DNA
 <213> Triticum aestivum

<220>
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 <222> (373)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (406)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (430)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (433)
 <223> n = A, C, G or T

<220>

<221> unsure
<222> (455)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (494)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (504)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (553)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (579)
<223> n = A, C, G or T

<220>
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<222> (583)
<223> n = A, C, G or T

<220>
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<222> (595)..(596)
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<220>
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<222> (620)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (639)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (644)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (650)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (661)
<223> n = A, C, G or T

<220>
<221> unsure

<222> (673)
<223> n = A, C, G or T

<400> 16
tttgagttgg agtacctgaa tattggaggt ggtttgggga tagactacca ccacactggt 60
gcagtcttgc ctacacctat ggatcttata aacactgtcc ggggaattggt cctctcacgg 120
gatcttactc tcattattga acctggaaga tccctgatcg ccaataacttg ctgcttcgtc 180
aataagggtca ctggtgtaaa atcgaatggc acgaagaatt tcattgtagt tgatggcagc 240
atggccgagc tcatcaggcc tagtctatat ggagcatatc agcatataga actagttctc 300
cctctccaag gtgcagaagt agcaaccttc cgatattggt ggggccagtc tgcgaatctg 360
cagattcctt ggnaaagaca aggagttcca acacctgaca aggganctgg ttgggtggtc 420
cacgacgcan ganctactgc atgagcatgg cttcnaccta caacctgaag atgaggcaac 480
cgagtattgg gtanaggaca tggncatgt aagataagca cggggaaaca ttgacgacac 540
atgagtcttg atngctccgc caggccttta ctggttggn aacnagcttca ttgtnnccac 600
cgtggaatct gggaacatcn tgtttagtgg gcaccacana gggnttttgn gacaatcaca 660
ntagatgaga ttntgg 676

<210> 17
<211> 73
<212> PRT
<213> Triticum aestivum

<400> 17
Pro Thr Pro Met Asp Leu Ile Asn Thr Val Arg Glu Leu Val Leu Ser
1 5 10 15
Arg Asp Leu Thr Leu Ile Ile Glu Pro Gly Arg Ser Leu Ile Ala Asn
20 25 30
Thr Cys Cys Phe Val Asn Lys Val Thr Gly Val Lys Ser Asn Gly Thr
35 40 45
Lys Asn Phe Ile Val Val Asp Gly Ser Met Ala Glu Leu Ile Arg Pro
50 55 60
Ser Leu Tyr Gly Ala Tyr Gln His Ile
65 70

<210> 18
<211> 544
<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (465)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (524)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (537)
<223> n = A, C, G or T

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<400> 18
ttgcaacaca cattgtcttg tcggcaaaat cttccacca caacacacag ccatggcagg      60
ctcaaacatt ctttctcact ctccttcctt tcccaaaacc tacagccact ccttaaacca      120
aaacgcgtta tcccaaaagc tttttttctt gccctcaaa ttcaaagcca ccacaaaacc      180
acgtgctctc agagcgggtc tctcgagaa cgctgtcaaa acctcgggtg aggacacaaa      240
gaacgctcat tttcagcact gtttcaccaa atccgaagat gggatatctgt actgtgaggg      300
cctcaagggt catgacatca tggaatctgt tgagagaaga ctttctatt tgtacagcaa      360
gccccagata actaggaatg ttgaagccta caaggatgca ttggaagggt tgaactccat      420
aattggttat gccattaagg ccaataataa cttgaagatt ttggnacatt tgaggcactt      480
gggttggtgt gctgtgcttg ttagtgggaa tgagctgaag ttgntcttcg agctggnttt      540
gttc

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<210> 19
<211> 62
<212> PRT
<213> Glycine max

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<220>
<221> UNSURE
<222> (44)
<223> Xaa = ANY AMINO ACID

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<400> 19
Arg Arg Pro Phe Tyr Leu Tyr Ser Lys Pro Gln Ile Thr Arg Asn Val
1           5           10           15
Glu Ala Tyr Lys Asp Ala Leu Glu Gly Leu Asn Ser Ile Ile Gly Tyr
          20           25           30
Ala Ile Lys Ala Asn Asn Asn Leu Lys Ile Leu Xaa His Leu Arg His
          35           40           45
Leu Gly Cys Gly Ala Val Leu Val Ser Gly Asn Glu Leu Lys
          50           55           60

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<210> 20
<211> 371
<212> PRT
<213> Pseudomonas aeruginosa

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<400> 20
Met Lys Arg Val Gly Leu Ile Gly Trp Arg Gly Met Val Gly Ser Val
1           5           10           15
Leu Ile Gln Arg Met Leu Glu Glu Arg Asp Phe Asp Leu Ile Glu Pro
          20           25           30
Val Phe Phe Thr Thr Ser Asn Val Gly Ala Gln Ala Pro Glu Val Asp
          35           40           45
Lys Asp Ile Ala Pro Leu Lys Asp Ala Tyr Ser Ile Asp Glu Leu Lys
          50           55           60
Thr Leu Asp Val Ile Leu Thr Cys Gln Gly Gly Asp Tyr Thr Ser Glu
65           70           75           80
Val Phe Pro Lys Leu Arg Glu Ala Gly Trp Gln Gly Tyr Trp Ile Asp
          85           90           95
Ala Ala Ser Ser Leu Arg Met Glu Asp Asp Ala Val Ile Val Leu Asp

```

| 100 | 105 | 110 |
|--|-----|-----|
| Pro Val Asn Arg Lys Val Ile Asp Gln Ala Leu Asp Ala Gly Thr Arg 115 120 125 | | |
| Asn Tyr Ile Gly Gly Asn Cys Thr Val Ser Leu Met Leu Met Ala Leu 130 135 140 | | |
| Gly Gly Leu Phe Asp Ala Gly Leu Val Glu Trp Met Ser Ala Met Thr 145 150 155 160 | | |
| Tyr Gln Ala Ala Ser Gly Ala Gly Ala Gln Asn Met Arg Asp Leu Leu 165 170 175 | | |
| Lys Gln Met Gly Ala Ala His Ala Ser Val Ala Asp Asp Leu Ala Asn 180 185 190 | | |
| Pro Ala Ser Ala Ile Leu Asp Ile Asp Arg Lys Val Ala Glu Thr Leu 195 200 205 | | |
| Arg Ser Glu Ala Phe Pro Thr Glu His Phe Gly Ala Pro Leu Gly Gly 210 215 220 | | |
| Ser Leu Ile Pro Trp Ile Asp Lys Glu Leu Ser Gln Arg Arg Gln Ser 225 230 235 240 | | |
| Arg Glu Glu Trp Lys Ala Gln Ala Glu Thr Asn Lys Ile Leu Ala Arg 245 250 255 | | |
| Phe Lys Asn Pro Ile Pro Val Asp Gly Ile Cys Val Arg Val Gly Ala 260 265 270 | | |
| Met Arg Cys His Ser Gln Ala Leu Thr Ile Lys Leu Asn Lys Asp Val 275 280 285 | | |
| Pro Leu Thr Asp Ile Glu Gly Leu Ile Arg Gln His Asn Pro Trp Val 290 295 300 | | |
| Lys Leu Val Pro Asn His Arg Glu Val Ser Val Arg Glu Leu Thr Pro 305 310 315 320 | | |
| Ala Ala Val Thr Gly Thr Leu Ser Val Pro Val Gly Arg Leu Arg Lys 325 330 335 | | |
| Leu Asn Met Val Ser Gln Tyr Leu Gly Ala Phe Thr Val Gly Asp Gln 340 345 350 | | |
| Leu Leu Trp Gly Ala Ala Glu Pro Leu Arg Arg Met Leu Arg Ile Leu 355 360 365 | | |
| Leu Glu Arg 370 | | |

<210> 21
 <211> 788
 <212> DNA
 <213> Zea mays

<400> 21
 cgacaacatc gcccccgcca tctctggcgg cttcgtcttc gtccgcagct acgaccctt 60
 tcacctgctc ccgctttcct tcccgccagc gctccgcctc cacttcgtcc tggtcacccc 120

| | | | | | | |
|------------|------------|------------|------------|------------|------------|-----|
| cgacttcgag | gcgcccacga | gcaagatgcg | cgccgcgctg | cccaggcagg | tcgacgtcca | 180 |
| gcagcacgtg | cgcaactcca | gccaggcagc | ggcgctcgtg | gcggcggtgc | tgcaggggga | 240 |
| cgcgggcctc | atcggtccg | cgatgtcgtc | cgacggcatc | gtggagccca | ccagggcacc | 300 |
| cctcatacct | ggcatggcgg | ccgtaaaggc | ggcggccctg | caagctggag | cgctgggctg | 360 |
| cacaattagc | ggcgcgggcc | ccacagtgg | ggccgtcatc | caaggggagg | aaagggggga | 420 |
| ggaggttgcc | cgcaagatgg | tggacgcgtt | ctggagcgca | ggcaagctca | aggcgacagc | 480 |
| aaccgtcgcg | cagctcgata | cccttggtgc | cagggtcatc | gccacgtcat | ccttgaacta | 540 |
| gcaaaagatt | cggaaagtgg | tactgcaatt | gtatcaccaa | acaaggaaga | atgaagggga | 600 |
| accccatgga | tttgtatgtt | ttctcttctt | tcttgcattc | ttaggtgggt | aattggcttt | 660 |
| ggaataaatg | agatggagga | catcgctaga | acaattctgt | tccgtgggct | gtaatttcaa | 720 |
| tttgggctgg | tttctttatc | atgccatgga | taattatgaa | taaatttgag | gtagtttggt | 780 |
| aaaaaaaa | | | | | | 788 |

<210> 22
 <211> 179
 <212> PRT
 <213> Zea mays

<400> 22
 Asp Asn Ile Ala Pro Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser
 1 5 10 15
 Tyr Asp Pro Phe His Leu Val Pro Leu Ser Phe Pro Pro Ala Leu Arg
 20 25 30
 Leu His Phe Val Leu Val Thr Pro Asp Phe Glu Ala Pro Thr Ser Lys
 35 40 45
 Met Arg Ala Ala Leu Pro Arg Gln Val Asp Val Gln Gln His Val Arg
 50 55 60
 Asn Ser Ser Gln Ala Ala Ala Leu Val Ala Ala Val Leu Gln Gly Asp
 65 70 75 80
 Ala Gly Leu Ile Gly Ser Ala Met Ser Ser Asp Gly Ile Val Glu Pro
 85 90 95
 Thr Arg Ala Pro Leu Ile Pro Gly Met Ala Ala Val Lys Ala Ala Ala
 100 105 110
 Leu Gln Ala Gly Ala Leu Gly Cys Thr Ile Ser Gly Ala Gly Pro Thr
 115 120 125
 Val Val Ala Val Ile Gln Gly Glu Glu Arg Gly Glu Glu Val Ala Arg
 130 135 140
 Lys Met Val Asp Ala Phe Trp Ser Ala Gly Lys Leu Lys Ala Thr Ala
 145 150 155 160
 Thr Val Ala Gln Leu Asp Thr Leu Gly Ala Arg Val Ile Ala Thr Ser
 165 170 175

Ser Leu Asn

<210> 23
 <211> 601
 <212> DNA
 <213> Oryza sativa

<220>

<221> unsure
<222> (433)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (600)
<223> n = A, C, G or T

<400> 23
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ctcaccaagg gcttccccct cggctccggc ctcggctcct ccgcccgcctc cgccgcgcgc 120
gctgccaaagg ccgttgacgc cctcttcggc tccctcctac accaagatga cctcgtcctc 180
gcgggcctcg agtccgagaa agccgtcagt ggcttccacg ccgacaacat cgccccggcc 240
atcctcggcg gcttcgtcct cgtccgcagc tacgaccctc tccacctcat cccgctctcc 300
tccccacctg cctccgcct ccacttcgtc ctcgtcacgc ccgacttcga ggcgcccacc 360
aagcaagatg cgtgccgcgc tgcccaaaca ggtggccgctc caccaagcac gtccgcaact 420
ccagccaagc ggncgcgctt gtcgccgctg tgctgcaagg ggacgccacc ctcacggct 480
ccgcaatgtc ctccgacggc atcgtggagc caacaaggcg ccgctgattc tggatggctg 540
cgggtcaaagg cgccggcttg gaactggggg aattggctgc acatcagtgg agaaggcaan 600
t 601

<210> 24
<211> 82
<212> PRT
<213> Oryza sativa

<220>
<221> UNSURE
<222> (56) (57)
<223> Xaa = ANY AMINO ACID

<400> 24
Val Ser Ile His Leu Thr Lys Gly Leu Pro Leu Gly Ser Gly Leu Gly
1 5 10 15
Ser Ser Ala Ala Ser Ala Ala Ala Ala Lys Ala Val Asp Ala Leu
20 25 30
Phe Gly Ser Leu Leu His Gln Asp Asp Leu Val Leu Ala Gly Leu Glu
35 40 45
Ser Glu Lys Ala Val Ser Gly Xaa Xaa His Ala Asp Asn Ile Ala Pro
50 55 60
Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser Tyr Asp Pro Phe His
65 70 75 80
Leu Ile

<210> 25
<211> 1543
<212> DNA
<213> Glycine max

<400> 25
gaagagagac aaaccagcaa gagtggagat ggcgacgtcg acgtgcttcc tgtgtccgctc 60
tacggcgagt ttgaaaggca gggccagatt cagaatcaga atcagatgca gcagcagcgt 120
gtcgggtcaat attcgaaggg agcccgaacc tgtaacgacg ctggtgaaag cgtttgctcc 180
cgccacggtg gcgaatctag gtccaggctt cgacttccta ggctgcgccg tggacggact 240

| | | | | | | |
|------------|-------------|------------|-------------|-------------|-------------|------|
| cggagacatt | gtgtcgggtga | aggttgaccc | acaggttcac | cctggcgaga | tatgcataatc | 300 |
| cgacatcagc | ggccacgccc | caaacaagct | cagcaaaaaac | cctctctgga | actgcgcggg | 360 |
| catcgccgcc | attgaagtca | tgaaaatgct | ctccattcga | tccgtcggcc | tctccctctc | 420 |
| cctggagaag | ggcctgcctt | tgggaagcgg | tctgggatcc | agcgccgcca | gcgcgcgcgc | 480 |
| ggccgccgtg | gcggtgaacg | agctgttttg | gaagaaatta | agcgtggagg | agctggttct | 540 |
| ggcatcactg | aaatcggaag | agaaggtgtc | ggggtatcac | gcggaacaacg | tggcgccatc | 600 |
| gataatgggg | ggttttgtgc | tgatcgggag | ctactcgccg | ctggagttga | tgccgttgaa | 660 |
| gtttccggca | gagaaggagc | tgtatttcgt | gctggtgacg | cctgagttcg | aggccccgac | 720 |
| gaagaagatg | cgggcagcgc | tgcctacgga | gatcgggatg | ccgcaccacg | tgtggaactg | 780 |
| cagccaggca | ggtgctctgg | tggcgctcgg | gctgcagggc | gacgtgggtg | ggttggggaa | 840 |
| ggcattgtcc | tctgacaaga | tcgttgagcc | aaggcgtgcc | cccttgattc | ctggcatgga | 900 |
| ggctgtcaag | agggctgcca | ttcaggccgg | tgcttttggc | tgtaccatca | gcggcgccgg | 960 |
| ccctaccgcc | gtcgccgtca | ttgacgacga | gcaaaactgga | cacctcattg | ccaaacacat | 1020 |
| gattgacgct | tttctccatg | ttggcaattt | gaaggcttct | gcaaagtca | agcagcttga | 1080 |
| tcgccttggg | gctagacgca | ttccaaattg | aaccttctct | tctctatctc | tatgagaggc | 1140 |
| ttgtagattt | caagaaccgg | atttcttcca | acttgctcgt | aacactctaa | gtgctgaccg | 1200 |
| gtcacatgta | tttgaaattt | gatctgatca | atgaagcagc | attctagtgt | ggaggtctga | 1260 |
| ataacaagag | aaacattaaa | ccaagctgg | gagctctgtt | tgggtggtgg | aaatttaa | 1320 |
| agatgaataa | ttatgaaaga | cctagatcag | gtcagtgtta | tggatgaactc | tgaagcatgt | 1380 |
| tttagatttt | ctttgctttg | tttttatcat | atttttatct | tgctacttga | gttgacaaaag | 1440 |
| ctcaaaaaga | agtcattttt | agtattttct | tgtttcatta | tgctagttaa | tcttagcttt | 1500 |
| tgaatagcat | gtattgttcc | ttaaaaaaaa | aaaaaaaaaa | aaa | | 1543 |

<210> 26
 <211> 483
 <212> PRT
 <213> Glycine max

<400> 26
 Met Ala Thr Ser Thr Cys Phe Leu Cys Pro Ser Thr Ala Ser Leu Lys
 1 5 10 15

Gly Arg Ala Arg Phe Arg Ile Arg Ile Arg Cys Ser Ser Ser Val Ser
 20 25 30

Val Asn Ile Arg Arg Glu Pro Glu Pro Val Thr Thr Leu Val Lys Ala
 35 40 45

Phe Ala Pro Ala Thr Val Ala Asn Leu Gly Pro Gly Phe Asp Phe Leu
 50 55 60

Gly Cys Ala Val Asp Gly Leu Gly Asp Ile Val Ser Val Lys Val Asp
 65 70 75 80

Pro Gln Val His Pro Gly Glu Ile Cys Ile Ser Asp Ile Ser Gly His
 85 90 95

Ala Pro Asn Lys Leu Ser Lys Asn Pro Leu Trp Asn Cys Ala Gly Ile
 100 105 110

Ala Ala Ile Glu Val Met Lys Met Leu Ser Ile Arg Ser Val Gly Leu
 115 120 125

Ser Leu Ser Leu Glu Lys Gly Leu Pro Leu Gly Ser Gly Leu Gly Ser
 130 135 140

Ser Ala Ala Ser Ala Ala Ala Ala Val Ala Val Asn Glu Leu Phe
 145 150 155 160

Gly Lys Lys Leu Ser Val Glu Glu Leu Val Leu Ala Ser Leu Lys Ser

[illegible]

<210> 27
 <211> 438
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (271)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (421)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (425)
 <223> n = A, C, G or T

<400> 27
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 ggcggcttcg tctcgtccg cagctacgac ccctttcacc tcgtcccgt ttccttcccg 120
 ccagcgctcc gcctccactt cgtcctggtc acccccgact tcgaggcgcc caccagcaag 180
 atgcgcgcg cgctgcccag gcaggtcgac gtccagcagc acgtgcgcaa ctccagccag 240
 gcagcggcgc tccgtggcgg cgggtgctgca nggggacgcc gggctcatcg gtccgcgatt 300
 tctccgacgg gcatcgtgga cccaccaagg aaccctcata cctggcatgg cggccgtaaa 360
 ggcggcggcc tgcaactgga cgctgggtgc acattaacgg gcgggcccac atggtggctc 420
 ncagngaaga gaggggag 438

<210> 28
 <211> 84
 <212> PRT
 <213> Triticum aestivum

<400> 28
 Leu Glu Ser Glu Lys Ala Val Ser Gly Phe His Ala Asp Asn Ile Ala
 1 5 10 15
 Pro Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser Tyr Asp Pro Phe
 20 25 30
 His Leu Val Pro Leu Ser Phe Pro Pro Ala Leu Arg Leu His Phe Val
 35 40 45
 Leu Val Thr Pro Asp Phe Glu Ala Pro Thr Ser Lys Met Arg Ala Ala
 50 55 60
 Leu Pro Arg Gln Val Asp Val Gln Gln His Val Arg Asn Ser Ser Gln
 65 70 75 80
 Ala Ala Ala Leu

<210> 29
 <211> 300
 <212> PRT
 <213> Methanococcus jannashii

<400> 29

Met Arg Glu Ile Met Lys Val Arg Val Lys Ala Pro Cys Thr Ser Ala
 1 5 10 15
 Asn Leu Gly Val Gly Phe Asp Val Phe Gly Leu Cys Leu Lys Glu Pro
 20 25 30
 Tyr Asp Val Ile Glu Val Glu Ala Ile Asp Asp Lys Glu Ile Ile Ile
 35 40 45
 Glu Val Asp Asp Lys Asn Ile Pro Thr Asp Pro Asp Lys Asn Val Ala
 50 55 60
 Gly Ile Val Ala Lys Lys Met Ile Asp Asp Phe Asn Ile Gly Lys Gly
 65 70 75 80
 Val Lys Ile Thr Ile Lys Lys Gly Val Lys Ala Gly Ser Gly Leu Gly
 85 90 95
 Ser Ser Ala Ala Ser Ser Ala Gly Thr Ala Tyr Ala Ile Asn Glu Leu
 100 105 110
 Phe Lys Leu Asn Leu Asp Lys Leu Lys Leu Val Asp Tyr Ala Ser Tyr
 115 120 125
 Gly Glu Leu Ala Ser Ser Gly Ala Lys His Ala Asp Asn Val Ala Pro
 130 135 140
 Ala Ile Phe Gly Gly Phe Thr Met Val Thr Asn Tyr Glu Pro Leu Glu
 145 150 155 160
 Val Leu His Ile Pro Ile Asp Phe Lys Leu Asp Ile Leu Ile Ala Ile
 165 170 175
 Pro Asn Ile Ser Ile Asn Thr Lys Glu Ala Arg Glu Ile Leu Pro Lys
 180 185 190
 Ala Val Gly Leu Lys Asp Leu Val Asn Asn Val Gly Lys Ala Cys Gly
 195 200 205
 Met Val Tyr Ala Leu Tyr Asn Lys Asp Lys Ser Leu Phe Gly Arg Tyr
 210 215 220
 Met Met Ser Asp Lys Val Ile Glu Pro Val Arg Gly Lys Leu Ile Pro
 225 230 235 240
 Asn Tyr Phe Lys Ile Lys Glu Glu Val Lys Asp Lys Val Tyr Gly Ile
 245 250 255
 Thr Ile Ser Gly Ser Gly Pro Ser Ile Ile Ala Phe Pro Lys Glu Glu
 260 265 270
 Phe Ile Asp Glu Val Glu Asn Ile Leu Arg Asp Tyr Tyr Glu Asn Thr
 275 280 285
 Ile Arg Thr Glu Val Gly Lys Gly Val Glu Val Val
 290 295 300

<210> 30
 <211> 1362
 <212> DNA

<213> Glycine max

<400> 30

| | | | | | | |
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| actttgtagt | tcgtagatag | ccgatgtgct | tgtcttagtg | tgtcagtc | tcctgttcct | 60 |
| caagtcaagc | ttttagtagtga | gcagatataa | tggctgttga | aaggtccgga | attgccaaag | 120 |
| atgttacgga | attgattggt | aaaaccccat | tagtatatct | aaataaactt | gcggatggtt | 180 |
| gtggtgccc | ggttgctgct | aaactggagt | tgatggagcc | atgctctagt | gtgaaggaca | 240 |
| ggattgggta | tagtatgatt | gctgatgcag | aagagaaggg | acttatcaca | cctggaaaga | 300 |
| gtgtcctcat | tgagccaaca | agtggtaata | ctggcattgg | attagccttc | atggcagcag | 360 |
| ccaggggtta | caagctcata | attacaatgc | ctgcttctat | gagtcttgag | agaagaatca | 420 |
| ttctattagc | ttttggagct | gagttgggtc | tgacagatcc | tgctaaggga | atgaaagggtg | 480 |
| ctggttcagaa | ggctgaagag | atattggcta | agacgcccc | tgccctacata | cttcaacaat | 540 |
| ttgaaaaccc | tgccaatccc | aaggttcatt | atgaaaccac | tggtccagag | atatggaaag | 600 |
| gctccgatgg | gaaaattgat | gcatttgttt | ctgggatagg | cactgggtgg | acaataacag | 660 |
| gtgctggaaa | atatcttaaa | gagcagaatc | cgaatataaa | gctgattggt | gtggaaccag | 720 |
| ttgaaagtcc | agtgctctca | ggaggaaagc | ctgggtccaca | caagattcaa | gggattggtg | 780 |
| ctgggttttat | ccctgggtgtc | ttggaagtca | atcttcttga | tgaagttggt | caaatatcaa | 840 |
| gtgatgaagc | aatagaaact | gcaaagcttc | ttgcgcttaa | agaaggccta | tttgtgggaa | 900 |
| tatcttcccg | agctgcagct | gctgctgctt | ttcagattgc | aaaaagacca | gaaaatgccg | 960 |
| ggaagcttat | tggtgccgtt | tttcccagct | tcggggagag | gtacctgtcc | tccgtgctat | 1020 |
| ttgagtcagt | gagacgcgaa | gctgaaagca | tgacttttga | gccctgaatt | cccgtttaag | 1080 |
| gctctcacta | ctgaattttt | ttgttacttg | taccaggctt | taactagatt | gttagagtag | 1140 |
| tactgtttgt | gactctgact | ctaaaataaa | acttgctcca | aaagactagt | ttttcttgat | 1200 |
| gcccctggag | cgataatttt | gtgcctgcaa | cattaaaaag | tattcaaagt | tgcttataag | 1260 |
| taacatgttt | catcttttgt | tggtgttgag | acgaacacgg | atgagggtcat | aatactatgt | 1320 |
| ttctgatttc | ctttggtagg | gaaaaaaaaa | aaaaaaaaaa | aa | | 1362 |

<210> 31

<211> 325

<212> PRT

<213> Glycine max

<400> 31

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Glu | Arg | Ser | Gly | Ile | Ala | Lys | Asp | Val | Thr | Glu | Leu | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Lys | Thr | Pro | Leu | Val | Tyr | Leu | Asn | Lys | Leu | Ala | Asp | Gly | Cys | Val |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ala | Arg | Val | Ala | Ala | Lys | Leu | Glu | Leu | Met | Glu | Pro | Cys | Ser | Ser | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Asp | Arg | Ile | Gly | Tyr | Ser | Met | Ile | Ala | Asp | Ala | Glu | Glu | Lys | Gly |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| Leu | Ile | Thr | Pro | Gly | Lys | Ser | Val | Leu | Ile | Glu | Pro | Thr | Ser | Gly | Asn |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Thr | Gly | Ile | Gly | Leu | Ala | Phe | Met | Ala | Ala | Ala | Arg | Gly | Tyr | Lys | Leu |
| | | | | 85 | | | | 90 | | | | | | 95 | |
| Ile | Ile | Thr | Met | Pro | Ala | Ser | Met | Ser | Leu | Glu | Arg | Arg | Ile | Ile | Leu |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Ala | Phe | Gly | Ala | Glu | Leu | Val | Leu | Thr | Asp | Pro | Ala | Lys | Gly | Met |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Lys | Gly | Ala | Val | Gln | Lys | Ala | Glu | Glu | Ile | Leu | Ala | Lys | Thr | Pro | Asn |
| | 130 | | | | | 135 | | | | | | 140 | | | |
| Ala | Tyr | Ile | Leu | Gln | Gln | Phe | Glu | Asn | Pro | Ala | Asn | Pro | Lys | Val | His |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 | | 150 | | 155 | | 160 | | | | | | | | | |
| Tyr | Glu | Thr | Thr | Gly | Pro | Glu | Ile | Trp | Lys | Gly | Ser | Asp | Gly | Lys | Ile |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Asp | Ala | Phe | Val | Ser | Gly | Ile | Gly | Thr | Gly | Gly | Thr | Ile | Thr | Gly | Ala |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Gly | Lys | Tyr | Leu | Lys | Glu | Gln | Asn | Pro | Asn | Ile | Lys | Leu | Ile | Gly | Val |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Glu | Pro | Val | Glu | Ser | Pro | Val | Leu | Ser | Gly | Gly | Lys | Pro | Gly | Pro | His |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Lys | Ile | Gln | Gly | Ile | Gly | Ala | Gly | Phe | Ile | Pro | Gly | Val | Leu | Glu | Val |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Leu | Leu | Asp | Glu | Val | Val | Gln | Ile | Ser | Ser | Asp | Glu | Ala | Ile | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Thr | Ala | Lys | Leu | Leu | Ala | Leu | Lys | Glu | Gly | Leu | Phe | Val | Gly | Ile | Ser |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ser | Gly | Ala | Ala | Ala | Ala | Ala | Ala | Phe | Gln | Ile | Ala | Lys | Arg | Pro | Glu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Asn | Ala | Gly | Lys | Leu | Ile | Val | Ala | Val | Phe | Pro | Ser | Phe | Gly | Glu | Arg |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Tyr | Leu | Ser | Ser | Val | Leu | Phe | Glu | Ser | Val | Arg | Arg | Glu | Ala | Glu | Ser |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Met | Thr | Phe | Glu | Pro | | | | | | | | | | | |
| | | | | 325 | | | | | | | | | | | |

<210> 32
 <211> 325
 <212> PRT
 <213> Citrullus lanatus

<400> 32

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asp | Ala | Lys | Ser | Thr | Ile | Ala | Lys | Asp | Val | Thr | Glu | Leu | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Asn | Thr | Pro | Leu | Val | Tyr | Leu | Asn | Arg | Val | Val | Asp | Gly | Cys | Val |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ala | Arg | Val | Ala | Ala | Lys | Leu | Glu | Met | Met | Glu | Pro | Cys | Ser | Ser | Val |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Lys | Asp | Arg | Ile | Gly | Tyr | Ser | Met | Ile | Ser | Asp | Ala | Glu | Asn | Lys | Gly |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Leu | Ile | Thr | Pro | Gly | Glu | Ser | Val | Leu | Ile | Glu | Pro | Thr | Ser | Gly | Asn |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Thr | Gly | Ile | Gly | Leu | Ala | Phe | Ile | Ala | Ala | Ala | Lys | Gly | Tyr | Arg | Leu |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| Ile | Ile | Cys | Met | Pro | Ala | Ser | Met | Ser | Leu | Glu | Arg | Arg | Thr | Ile | Leu |
| | | | 100 | | | | | 105 | | | | | | | 110 |

Arg Ala Phe Gly Ala Glu Leu Val Leu Thr Asp Pro Ala Arg Gly Met
 115 120 125
 Lys Gly Ala Val Gln Lys Ala Glu Glu Ile Lys Ala Lys Thr Pro Asn
 130 135 140
 Ser Tyr Ile Leu Gln Gln Phe Glu Asn Pro Ala Asn Pro Lys Ile His
 145 150 155 160
 Tyr Glu Thr Thr Gly Pro Glu Ile Trp Arg Gly Ser Gly Gly Lys Ile
 165 170 175
 Asp Ala Leu Val Ser Gly Ile Gly Thr Gly Gly Thr Val Thr Gly Ala
 180 185 190
 Gly Lys Tyr Leu Lys Glu Gln Asn Pro Asn Ile Lys Leu Tyr Gly Val
 195 200 205
 Glu Pro Val Glu Ser Ala Ile Leu Ser Gly Gly Lys Pro Gly Pro His
 210 215 220
 Lys Ile Gln Gly Ile Gly Ala Gly Phe Ile Pro Gly Val Leu Asp Val
 225 230 235 240
 Asn Leu Leu Asp Glu Val Ile Gln Val Ser Ser Glu Glu Ser Ile Glu
 245 250 255
 Thr Ala Lys Leu Leu Ala Leu Lys Glu Gly Leu Leu Val Gly Ile Ser
 260 265 270
 Ser Gly Ala Ala Ala Ala Ala Ala Ile Arg Ile Ala Lys Arg Pro Glu
 275 280 285
 Asn Ala Gly Lys Leu Ile Val Ala Val Phe Pro Ser Phe Gly Glu Arg
 290 295 300
 Tyr Leu Ser Thr Val Leu Phe Glu Ser Val Lys Arg Glu Thr Glu Asn
 305 310 315 320
 Met Val Phe Glu Pro
 325

<210> 33

<211> 789

<212> DNA

<213> Zea mays

<400> 33

| | | | | | | |
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| atagcgcatt | ctcatggtgc | tcttggtttg | gttgacaaca | gcatcatgct | tccagtgtct | 60 |
| tcccgtccta | tagaactggg | agctgatatc | gtgatgcact | cggctaccaa | atttatagcg | 120 |
| ggacatagtg | atcttatggc | tgggaattctt | gcagtgaagg | gtgagagttt | ggctaaagag | 180 |
| gtagggtttc | tgcaaaatgc | tgaagggtcg | ggtctggcac | cttttgactg | ctggctttgc | 240 |
| ttgaggggaa | tcaaaaccat | ggctctgcgg | gtggagaaac | aacaggctaa | tgcccagaag | 300 |
| attgctgaat | tcctggcgtc | tcacccgagg | gtcaagcaag | taaaactacgc | tgggcttcct | 360 |
| gaccatcctg | ggcgagcttt | acactatttc | caggcaaagg | gagcgggctc | tggtctcagt | 420 |
| tttctcaccg | gctcactggc | cctctcaaag | cacgtcgtgg | agaccaccaa | gtacttcagc | 480 |
| gtaacagtca | gcttcgggag | cgtgaagtcc | ctcatcagcc | tgccgtgctt | catgtcccac | 540 |
| gcatcaatcc | ctgcctcggt | ccgcgaggag | cgtggcctaa | ccgacgacct | cgcccgata | 600 |
| tcggtcggca | tcgaggatgt | cgaggacctc | atcgccgatc | tggaccgcgc | gctcagaact | 660 |

| | |
|---|-----|
| ggcccggtgt agacatcgcc gatccttagg tcatgtcaag ctatcttttg atgattcatt | 720 |
| ggttgactgc ttgcgtgatg ataataatgg gaatgttgct tggataaaaa aaaaaaaaaa | 780 |
| aaaactcga | 789 |

<210> 34
 <211> 223
 <212> PRT
 <213> Zea mays

<400> 34
 Ile Ala His Ser His Gly Ala Leu Val Leu Val Asp Asn Ser Ile Met
 1 5 10 15
 Ser Pro Val Leu Ser Arg Pro Ile Glu Leu Gly Ala Asp Ile Val Met
 20 25 30
 His Ser Ala Thr Lys Phe Ile Ala Gly His Ser Asp Leu Met Ala Gly
 35 40 45
 Ile Leu Ala Val Lys Gly Glu Ser Leu Ala Lys Glu Val Gly Phe Leu
 50 55 60
 Gln Asn Ala Glu Gly Ser Gly Leu Ala Pro Phe Asp Cys Trp Leu Cys
 65 70 75 80
 Leu Arg Gly Ile Lys Thr Met Ala Leu Arg Val Glu Lys Gln Gln Ala
 85 90 95
 Asn Ala Gln Lys Ile Ala Glu Phe Leu Ala Ser His Pro Arg Val Lys
 100 105 110
 Gln Val Asn Tyr Ala Gly Leu Pro Asp His Pro Gly Arg Ala Leu His
 115 120 125
 Tyr Ser Gln Ala Lys Gly Ala Gly Ser Val Leu Ser Phe Leu Thr Gly
 130 135 140
 Ser Leu Ala Leu Ser Lys His Val Val Glu Thr Thr Lys Tyr Phe Ser
 145 150 155 160
 Val Thr Val Ser Phe Gly Ser Val Lys Ser Leu Ile Ser Leu Pro Cys
 165 170 175
 Phe Met Ser His Ala Ser Ile Pro Ala Ser Val Arg Glu Glu Arg Gly
 180 185 190
 Leu Thr Asp Asp Leu Val Arg Ile Ser Val Gly Ile Glu Asp Val Glu
 195 200 205
 Asp Leu Ile Ala Asp Leu Asp Arg Ala Leu Arg Thr Gly Pro Val
 210 215 220

<210> 35
 <211> 547
 <212> DNA
 <213> Oryza sativa

<220>
 <221> unsure
 <222> (260)
 <223> n = A, C, G or T

<220>
<221> unsure
<222> (306)
<223> n = A, C, G or T

<220>
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<222> (376)
<223> n = A, C, G or T

<220>
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<222> (383)
<223> n = A, C, G or T

<220>
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<222> (404)
<223> n = A, C, G or T

<220>
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<222> (432)
<223> n = A, C, G or T

<220>
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<222> (446)
<223> n = A, C, G or T

<220>
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<222> (455) (456)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (509)
<223> n = A, C, G or T

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<222> (514)
<223> n = A, C, G or T

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<222> (522)
<223> n = A, C, G or T

<220>
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<222> (537)
<223> n = A, C, G or T

<400> 35
gccttatggc taagcttgag aaggcggatc aggcattctg cttcaccagt gggatggcag 60
cactagctgc agtaacacac ctcccttaagt ctggacaaga aatagttgct ggagaggaca 120
tatatgggtgg ctcagaccgt ctgctctcac aagttgcccc gagacatggg attgtagtaa 180
aacgaattga tacaaccaa attagtgagg taacttctgc aattggggcc ttggactaaa 240

| | | | | | | |
|------------|-------------|------------|------------|------------|------------|-----|
| ctaagtatgg | ctttgaaaaan | cccaccatcc | ccgtcctaca | aattactgga | tataaagaaa | 300 |
| atagcnagag | atagtcatta | caatggggct | ccttggttta | agtagacaac | agcacatgtc | 360 |
| tcctgtgct | ctcccngtcc | tcntaaaact | ttgggccaaa | tatnggtttg | cacccaagc | 420 |
| aaccaattta | tnctgggcat | agcgtnttta | tggcnnggat | ccttgccggg | aaggggtgaa | 480 |
| agcacttggc | taaagagatg | cattcctcna | aaanctgaag | gntaagtttg | gacattngat | 540 |
| gccgggtt | | | | | | 547 |

<210> 36
 <211> 75
 <212> PRT
 <213> *Oryza sativa*

<400> 36
 Leu Met Ala Lys Leu Glu Lys Ala Asp Gln Ala Phe Cys Phe Thr Ser
 1 5 10 15
 Gly Met Ala Ala Leu Ala Ala Val Thr His Leu Leu Lys Ser Gly Gln
 20 25 30
 Glu Ile Val Ala Gly Glu Asp Ile Tyr Gly Gly Ser Asp Arg Leu Leu
 35 40 45
 Ser Gln Val Ala Pro Arg His Gly Ile Val Val Lys Arg Ile Asp Thr
 50 55 60
 Thr Lys Ile Ser Glu Val Thr Ser Ala Ile Gly
 65 70 75

<210> 37
 <211> 1733
 <212> DNA
 <213> Glycine max

| | | | | | | |
|-------------|------------|-------------|-------------|-------------|-------------|------|
| caaagacggc | attgaagttg | aacaatccat | cactaacaca | agcgcagaca | acaacataac | 60 |
| cctgctccaa | acacatcaat | ttcaataatg | ttttcttctg | caatttctca | gaagcccttc | 120 |
| cttcagtccc | tcgtcattga | tcgttacgct | cagagcacia | ctgctgcaac | cagggtgggag | 180 |
| tgcttggggg | ttaacaagtc | agaaaatttc | agtaccaaga | gagtgttgcg | tgcagagggg | 240 |
| ttcaagttga | attgcttggt | tgaaaataga | gagatggaag | tggagtcac | atcatcatct | 300 |
| ttggtggatg | atgctgccat | gagcttaagt | gaagaggatt | taggggagcc | tagtatttca | 360 |
| acaatgggtga | tgaatttcga | gagtaagttt | gacccctttg | gagcaattag | taccccgctt | 420 |
| taccaaacgg | ctacttttaa | gcagccttct | gcaatagaaa | atggctcccta | tgactatacc | 480 |
| agaagtggaa | atcctactcg | tgatgcttta | gaaagtttac | tagcaaagct | tgataaagca | 540 |
| gatagagccc | tgtgcttcac | cagtggaaatg | gctgctttga | gtgctgttgt | tcgtcttggt | 600 |
| ggaactgggtg | aggaaattgt | caccggagat | gatgtatatg | gtggctcaga | taggttgctg | 660 |
| tctcaagtag | ttccaaggac | tggaattgtg | gtgaaacggg | taaatacatg | tgatctagat | 720 |
| gaggttgctg | ctgccattgg | actcaggact | aagcttggtg | ggcttgagag | tccaaccaat | 780 |
| cctcggttc | aaatttctga | tattcgaaaa | atatcagaga | tggctcattc | acatgggtgct | 840 |
| cttgtgttag | tggacaatag | tataatgtca | cctgtgttgt | ctcagccatt | ggaacttgga | 900 |
| gcagatattg | tcatgcactc | agctacaaaa | tttattgctg | gacatagtga | cattatggct | 960 |
| ggtgtgcttg | ctgtgaaggg | tgaaaagttg | ggaaaggaaa | tgtatttctt | gcaaaatgca | 1020 |
| gaggggttcag | gcttagcacc | atttgactgt | tggctttgtt | tgcgaggaat | caagacaatg | 1080 |
| gccctgcgaa | ttgaaaagca | acaggataac | gcacagaaga | ttgcagagtt | ccttgccctcc | 1140 |
| catcctcgag | tgaaggaagt | gaattatgct | ggcttgccctg | gtcatcctgg | tcgtgattta | 1200 |
| cactattctc | aggcaaaggg | tgcaggatct | gtgcttagct | tcttgactgg | ttcattggca | 1260 |
| ctttcaaagc | atattgttga | aactacaaaa | tacttcagta | taaccgtcag | ctttgggag | 1320 |
| gttaagtcctc | tcattagcat | gccatgcttt | atgtcacatg | caagcatacc | tgctgcagtt | 1380 |
| cgcgaggcca | gaggtttaac | tgaagatctt | gtacgaatat | ctgtgggaat | tgaggatgtg | 1440 |
| aatgatctca | ttgctgatct | tggcaatgca | cttagaactg | gacctcttta | atgtctcttc | 1500 |
| caccccccca | cccaaaaaga | aaaaaattca | tccttaagaa | gttggattag | catgttgagg | 1560 |
| atttgggagc | attgctatcc | tgtcttttga | ttcttgagag | tggaaacttg | aagtgttgct | 1620 |

tatgtgcatg taataaaatc aatatttcct gtaattttgt tgtaacaatt gttatcctta 1680
 ccttgcaata tcatgtcata caagttacta ttgaaaaaaa aaaaaaaaaa aaa 1733

<210> 38
 <211> 467
 <212> PRT
 <213> Glycine max

<400> 38
 Met Phe Ser Ser Ala Ile Ser Gln Lys Pro Phe Leu Gln Ser Leu Val
 1 5 10 15
 Ile Asp Arg Tyr Ala Gln Ser Thr Thr Ala Ala Thr Arg Trp Glu Cys
 20 25 30
 Leu Gly Phe Asn Lys Ser Glu Asn Phe Ser Thr Lys Arg Val Leu Arg
 35 40 45
 Ala Glu Gly Phe Lys Leu Asn Cys Leu Val Glu Asn Arg Glu Met Glu
 50 55 60
 Val Glu Ser Ser Ser Ser Ser Ser Leu Val Asp Asp Ala Ala Met Ser Leu
 65 70 75 80
 Ser Glu Glu Asp Leu Gly Glu Pro Ser Ile Ser Thr Met Val Met Asn
 85 90 95
 Phe Glu Ser Lys Phe Asp Pro Phe Gly Ala Ile Ser Thr Pro Leu Tyr
 100 105 110
 Gln Thr Ala Thr Phe Lys Gln Pro Ser Ala Ile Glu Asn Gly Pro Tyr
 115 120 125
 Asp Tyr Thr Arg Ser Gly Asn Pro Thr Arg Asp Ala Leu Glu Ser Leu
 130 135 140
 Leu Ala Lys Leu Asp Lys Ala Asp Arg Ala Leu Cys Phe Thr Ser Gly
 145 150 155 160
 Met Ala Ala Leu Ser Ala Val Val Arg Leu Val Gly Thr Gly Glu Glu
 165 170 175
 Ile Val Thr Gly Asp Asp Val Tyr Gly Gly Ser Asp Arg Leu Leu Ser
 180 185 190
 Gln Val Val Pro Arg Thr Gly Ile Val Val Lys Arg Val Asn Thr Cys
 195 200 205
 Asp Leu Asp Glu Val Ala Ala Ala Ile Gly Leu Arg Thr Lys Leu Val
 210 215 220
 Trp Leu Glu Ser Pro Thr Asn Pro Arg Leu Gln Ile Ser Asp Ile Arg
 225 230 235 240
 Lys Ile Ser Glu Met Ala His Ser His Gly Ala Leu Val Leu Val Asp
 245 250 255
 Asn Ser Ile Met Ser Pro Val Leu Ser Gln Pro Leu Glu Leu Gly Ala
 260 265 270
 Asp Ile Val Met His Ser Ala Thr Lys Phe Ile Ala Gly His Ser Asp

| 275 | | | | | 280 | | | | | 285 | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Met | Ala | Gly | Val | Leu | Ala | Val | Lys | Gly | Glu | Lys | Leu | Gly | Lys | Glu | |
| 290 | | | | | 295 | | | | | 300 | | | | | | |
| Met | Tyr | Phe | Leu | Gln | Asn | Ala | Glu | Gly | Ser | Gly | Leu | Ala | Pro | Phe | Asp | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Cys | Trp | Leu | Cys | Leu | Arg | Gly | Ile | Lys | Thr | Met | Ala | Leu | Arg | Ile | Glu | |
| 325 | | | | | 330 | | | | | 335 | | | | | | |
| Lys | Gln | Gln | Asp | Asn | Ala | Gln | Lys | Ile | Ala | Glu | Phe | Leu | Ala | Ser | His | |
| 340 | | | | | 345 | | | | | 350 | | | | | | |
| Pro | Arg | Val | Lys | Glu | Val | Asn | Tyr | Ala | Gly | Leu | Pro | Gly | His | Pro | Gly | |
| 355 | | | | | 360 | | | | | 365 | | | | | | |
| Arg | Asp | Leu | His | Tyr | Ser | Gln | Ala | Lys | Gly | Ala | Gly | Ser | Val | Leu | Ser | |
| 370 | | | | | 375 | | | | | 380 | | | | | | |
| Phe | Leu | Thr | Gly | Ser | Leu | Ala | Leu | Ser | Lys | His | Ile | Val | Glu | Thr | Thr | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Lys | Tyr | Phe | Ser | Ile | Thr | Val | Ser | Phe | Gly | Ser | Val | Lys | Ser | Leu | Ile | |
| 405 | | | | | 410 | | | | | 415 | | | | | | |
| Ser | Met | Pro | Cys | Phe | Met | Ser | His | Ala | Ser | Ile | Pro | Ala | Ala | Val | Arg | |
| 420 | | | | | 425 | | | | | 430 | | | | | | |
| Glu | Ala | Arg | Gly | Leu | Thr | Glu | Asp | Leu | Val | Arg | Ile | Ser | Val | Gly | Ile | |
| 435 | | | | | 440 | | | | | 445 | | | | | | |
| Glu | Asp | Val | Asn | Asp | Leu | Ile | Ala | Asp | Leu | Gly | Asn | Ala | Leu | Arg | Thr | |
| 450 | | | | | 455 | | | | | 460 | | | | | | |

Gly Pro Leu
465

<210> 39
 <211> 637
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (400)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (417)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (486)
 <223> n = A, C, G or T

<220>
 <221> unsure
 <222> (492) (493)

<223> n = A, C, G or T

<220>

<221> unsure

<222> (505)

<223> n = A, C, G or T

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<221> unsure

<222> (518)

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<221> unsure

<222> (524)

<223> n = A, C, G or T

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<222> (530)

<223> n = A, C, G or T

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<221> unsure

<222> (532)

<223> n = A, C, G or T

<220>

<221> unsure

<222> (557)

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<221> unsure

<222> (563)

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<221> unsure

<222> (581)

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<221> unsure

<222> (591)

<223> n = A, C, G or T

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<221> unsure

<222> (596)

<223> n = A, C, G or T

<220>

<221> unsure

<222> (617)

<223> n = A, C, G or T

<400> 39

| | | | | | | |
|------------|------------|------------|------------|------------|------------|-----|
| agcgtggcca | cgatactgac | cagcttcgag | aactcgttcg | acaagtatgg | ggctctcagc | 60 |
| acgccgctgt | accagacggc | caccttcaag | cagccttcag | caaccgttaa | tggagcttat | 120 |
| gattatacta | gaagtggcaa | ccctactcgt | gatgttctcc | agagccttat | ggctaagctc | 180 |

| | | | | | | |
|------------|------------|------------|------------|------------|-------------|-----|
| gagaaggcag | accaagcatt | ctgcttcact | agtgggatgg | catcactggg | ctgcagtaac | 240 |
| acacctcctt | caggctggac | aagaaatagt | tgctggagag | gacatatatg | gtgggtctgat | 300 |
| cgtctgctct | cacaagttgt | cccaagaaat | ggaattgtag | taaaacgggt | cgatacaact | 360 |
| aaaattaacg | acgtgactgc | tgcacggac | ccttgactan | actagtttgg | ttgaaancca | 420 |
| caatcctcgt | caacaattac | tgtataagaa | atctcagggg | tactcatcca | tggggactgg | 480 |
| tttgngggca | annttcattg | cccanggcta | cctggccnat | aaantggggn | antatgggag | 540 |
| catcagtaca | aattatnctg | gcnatgtcta | ggtggatctc | ntaaggggaa | nttggnagga | 600 |
| ttcttcaaaa | cctagtnggt | tgacttatgt | ggttggt | | | 637 |

<210> 40
 <211> 131
 <212> PRT
 <213> Triticum aestivum

<220>
 <221> UNSURE
 <222> (77)
 <223> Xaa = ANY AMINO ACID

<220>
 <221> UNSURE
 <222> (99)
 <223> Xaa = ANY AMINO ACID

<400> 40
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 1 5 10 15
 Gly Ala Leu Ser Thr Pro Leu Tyr Gln Thr Ala Thr Phe Lys Gln Pro
 20 25 30
 Ser Ala Thr Val Asn Gly Ala Tyr Asp Tyr Thr Arg Ser Gly Asn Pro
 35 40 45
 Thr Arg Asp Val Leu Gln Ser Leu Met Ala Lys Leu Glu Lys Ala Asp
 50 55 60
 Gln Ala Phe Cys Phe Thr Ser Gly Met Ala Ser Leu Xaa Ala Val Thr
 65 70 75 80
 His Leu Leu Gln Ala Gly Gln Glu Ile Val Ala Gly Glu Asp Ile Tyr
 85 90 95
 Gly Gly Xaa Asp Arg Leu Leu Ser Gln Val Val Pro Arg Asn Gly Ile
 100 105 110
 Val Val Lys Arg Val Asp Thr Thr Lys Ile Asn Asp Val Thr Ala Ala
 115 120 125
 Ser Asp Pro
 130

<210> 41
 <211> 464
 <212> PRT
 <213> Arabidopsis thaliana

<400> 41
 Met Thr Ser Ser Leu Ser Leu His Ser Ser Phe Val Pro Ser Phe Ala
 1 5 10 15

Asp Leu Ser Asp Arg Gly Leu Ile Ser Lys Asn Ser Pro Thr Ser Val
 20 25 30
 Ser Ile Ser Lys Val Pro Thr Trp Glu Lys Lys Gln Ile Ser Asn Arg
 35 40 45
 Asn Ser Phe Lys Leu Asn Cys Val Met Glu Lys Ser Val Asp Gly Gln
 50 55 60
 Thr His Ser Thr Val Asn Asn Thr Thr Asp Ser Leu Asn Thr Met Asn
 65 70 75 80
 Ile Lys Glu Glu Ala Ser Val Ser Thr Leu Leu Val Asn Leu Asp Asn
 85 90 95
 Lys Phe Asp Pro Phe Asp Ala Met Ser Thr Pro Leu Tyr Gln Thr Ala
 100 105 110
 Thr Phe Lys Gln Pro Ser Ala Ile Glu Asn Gly Pro Tyr Asp Tyr Thr
 115 120 125
 Arg Ser Gly Asn Pro Thr Arg Asp Ala Leu Glu Ser Leu Leu Ala Lys
 130 135 140
 Leu Asp Lys Ala Asp Arg Ala Phe Cys Phe Thr Ser Gly Met Ala Ala
 145 150 155 160
 Leu Ser Ala Val Thr His Leu Ile Lys Asn Gly Glu Glu Ile Val Ala
 165 170 175
 Gly Asp Asp Val Tyr Gly Gly Ser Asp Arg Leu Leu Ser Gln Val Val
 180 185 190
 Pro Arg Ser Gly Val Val Val Lys Arg Val Asn Thr Thr Lys Leu Asp
 195 200 205
 Glu Val Ala Ala Ala Ile Gly Pro Gln Thr Lys Leu Val Trp Leu Glu
 210 215 220
 Ser Pro Thr Asn Pro Arg Gln Gln Ile Ser Asp Ile Arg Lys Ile Ser
 225 230 235 240
 Glu Met Ala His Ala Gln Gly Ala Leu Val Leu Val Asp Asn Ser Ile
 245 250 255
 Met Ser Pro Val Leu Ser Arg Pro Leu Glu Leu Gly Ala Asp Ile Val
 260 265 270
 Met His Ser Ala Thr Lys Phe Ile Ala Gly His Ser Asp Val Met Ala
 275 280 285
 Gly Val Leu Ala Val Lys Gly Glu Lys Leu Ala Lys Glu Val Tyr Phe
 290 295 300
 Leu Gln Asn Ser Glu Gly Ser Gly Leu Ala Pro Phe Asp Cys Trp Leu
 305 310 315 320
 Cys Leu Arg Gly Ile Lys Thr Met Ala Leu Arg Ile Glu Lys Gln Gln
 325 330 335
 Glu Asn Ala Arg Lys Ile Ala Met Tyr Leu Ser Ser His Pro Arg Val

| | | |
|---|-----|-----|
| 340 | 345 | 350 |
| Lys Lys Val Tyr Tyr Ala Gly Leu Pro Asp His Pro Gly His His Leu | | |
| 355 | 360 | 365 |
| His Phe Ser Gln Ala Lys Gly Ala Gly Ser Val Phe Ser Phe Ile Thr | | |
| 370 | 375 | 380 |
| Gly Ser Val Ala Leu Ser Lys His Leu Val Glu Thr Thr Lys Tyr Phe | | |
| 385 | 390 | 395 |
| Ser Ile Ala Val Ser Phe Gly Ser Val Lys Ser Leu Ile Ser Met Pro | | |
| 405 | 410 | 415 |
| Cys Phe Met Ser His Ala Ser Ile Pro Ala Glu Val Arg Glu Ala Arg | | |
| 420 | 425 | 430 |
| Gly Leu Thr Glu Asp Leu Val Arg Ile Ser Ala Gly Ile Glu Asp Val | | |
| 435 | 440 | 445 |
| Asp Asp Leu Ile Ser Asp Leu Asp Ile Ala Phe Lys Thr Phe Pro Leu | | |
| 450 | 455 | 460 |

<210> 42
 <211> 1113
 <212> DNA
 <213> Zea mays

<400> 42

| | | | | | | |
|------------|-------------|------------|------------|------------|-------------|------|
| gccgtccagg | acctcgcggc | ccctggggcg | ttcgacggcg | tcgacatcgc | gctattcagc | 60 |
| gccggcggga | gcgtcagccg | gaagtatggg | cccgcggccg | tcgccagcgg | cgccgtagtt | 120 |
| gtcgacaaca | gctccgcgtt | ccggatggag | cccgaggtgc | cgctcgtcat | ccccgaggtc | 180 |
| aaccccagag | ccatggcgaa | cgtcgcctc | gggcaggggg | cgattgtggc | aaatccgaat | 240 |
| tgctcgacca | tcattctgcct | catggctgcc | acgccgctcc | atcgccacgc | taagggtgta | 300 |
| aggatggttg | tcagcacata | ccaagcagca | agtggctcgg | gtgctgcggc | aatggaagaa | 360 |
| ctcaagctgc | agactcagga | ggtcttggaa | gggaaggcgc | caacatgcaa | cattttcaaa | 420 |
| cagcagtatg | cttttaatat | attctcacac | aatgcaccag | ttcttgagaa | tgggtataac | 480 |
| gaggaggaaa | tgaaaatggt | gaaggagacc | aggaaaattt | ggaatgacaa | ggagggtgaaa | 540 |
| gtaactgcga | cttgcatacg | ggttcctgtg | atgcgcgcac | atgctgaaag | tgtcaatcta | 600 |
| cagtttgaaa | agccacttga | tgaggatact | gcaagagaaa | ttttgagagc | agctcctggt | 660 |
| gttaccatta | ttgatgaccg | agcttccaat | cgctttccta | cacctctgga | ggtatcagac | 720 |
| aaagatgacg | tagcagtggg | taggattcgt | caggacttgt | ccctggatgg | taaccgaggg | 780 |
| ttggacatat | ttgtgtgtgg | tgatcagata | cgtaaaggcg | ccgcactcaa | tgccgttcag | 840 |
| attgctgaaa | tgctgctgaa | gtgaatgtga | cctaaccctc | ttgtccctcc | ctccctgtcc | 900 |
| ctaattgctc | tgatcaaatt | ctggactgta | ctctgattag | tttgtcctca | atthttggtcg | 960 |
| cctgttctgt | attctgccgt | gctagtgcaa | taattgtgtt | atgggcttga | gttatctgct | 1020 |
| gtacgcataa | gtgggctcct | aaactgggaa | ataatgggcc | gtccttattc | agcattccgg | 1080 |
| tttatatctt | gttcaaaaaa | aaaaaaaaaa | ata | | | 1113 |

<210> 43
 <211> 287
 <212> PRT
 <213> Zea mays

<400> 43

| |
|---|
| Ala Val Gln Asp Leu Ala Ala Pro Gly Ala Phe Asp Gly Val Asp Ile |
| 1 5 10 15 |
| Ala Leu Phe Ser Ala Gly Gly Ser Val Ser Arg Lys Tyr Gly Pro Ala |
| 20 25 30 |


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gtggacaaca gctccgcctt ccggatggac cccgaggtgc cgctcgatcat ccccgaggtc 480
aatcccgagg ccatggcgca cgtccggctg ggaaaggggg ctattgtggc caaccggaac 540
tggtccacca tcattctgct catggctgcc acacctctgc accgccacgc caaggtggta 600
aggatgggtt tcagcactta ccaagcagca agtgggtgctg gggctgcggc catggaagaa 660
ctcaaacttc aaactcaaga ggtcttggcg gggaaagcac caacatgcaa cattttcagt 720
cagcagtatg cttttaatat attttcacat aatgcaccaa ttgttgaaaa tgggtacaat 780
gaggaggaga tgaagatggg gaaggagacc agaaaaatct ggaatgataa agatgtgaag 840
gtaactgcaa cctgcatacg agttcctgtg atgcgtgcac atgctgaaag tgtgaatcta 900
cagtttgaaa agccacttga tgaggatact gcaagggaaa tcttgagggc agctgaaggt 960
gttaccatta ttgatgaccg tgcttccaat cgcttcccca cactcttga ggtatcggt 1020
aaagatgatg tagcagtggg tagaattcgt caggatttgt cgcaagatga taacaaagg 1080
ctggacatat ttgtttgtgg agatcaaata cgtaaagggt ctgcactcaa tgctgtgcag 1140
attgctgaaa tgctactcaa gtgattttct tttctgtacc tttctctcct tgccctctt 1200
tgctctagtc attgtttgac ggatgtactc tggttagtat gagatcaatt ttgatcatct 1260
tttgaatct atattcctag tgaaataaat gtaaaacggt tttgctctat cttctgcaca 1320
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aaaaaaaaaa aaaaaaaaaa aa
1402

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<210> 45

<211> 375

<212> PRT

<213> *Oryza sativa*

<400> 45

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Met Gln Ala Ala Ala Ala Val His Arg Pro His Leu Leu Gly Ala
 1              5              10              15

Tyr Pro Gly Gly Gly Arg Ala Arg Arg Pro Ser Ser Thr Val Arg Met
          20              25              30

Ala Leu Arg Glu Asp Gly Pro Ser Val Ala Ile Val Gly Ala Thr Gly
 35              40              45

Ala Val Gly Gln Glu Phe Leu Arg Val Ile Ser Ser Arg Gly Phe Pro
 50              55              60

Tyr Arg Ser Leu Arg Leu Leu Ala Ser Glu Arg Ser Ala Gly Lys Arg
 65              70              75              80

Leu Pro Phe Glu Gly Gln Glu Tyr Thr Val Gln Asp Leu Ala Ala Pro
          85              90              95

Gly Ala Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly Gly
          100              105              110

Val Ser Arg Ala His Ala Pro Ala Ala Val Ala Ser Gly Ala Val Val
          115              120              125

Val Asp Asn Ser Ser Ala Phe Arg Met Asp Pro Glu Val Pro Leu Val
          130              135              140

Ile Pro Glu Val Asn Pro Glu Ala Met Ala His Val Arg Leu Gly Lys
          145              150              155              160

Gly Ala Ile Val Ala Asn Pro Asn Cys Ser Thr Ile Ile Cys Leu Met
          165              170              175

Ala Ala Thr Pro Leu His Arg His Ala Lys Val Val Arg Met Val Val
          180              185              190

Ser Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Ala Met Glu Glu

```

| | | | | |
|---|--|-----|--|-----|
| 195 | | 200 | | 205 |
| Leu Lys Leu Gln Thr Gln Glu Val Leu Ala Gly Lys Ala Pro Thr Cys | | | | |
| 210 | | 215 | | 220 |
| Asn Ile Phe Ser Gln Gln Tyr Ala Phe Asn Ile Phe Ser His Asn Ala | | | | |
| 225 | | 230 | | 235 |
| | | | | 240 |
| Pro Ile Val Glu Asn Gly Tyr Asn Glu Glu Glu Met Lys Met Val Lys | | | | |
| | | 245 | | 250 |
| | | | | 255 |
| Glu Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Lys Val Thr Ala Thr | | | | |
| | | 260 | | 265 |
| | | | | 270 |
| Cys Ile Arg Val Pro Val Met Arg Ala His Ala Glu Ser Val Asn Leu | | | | |
| | | 275 | | 280 |
| | | | | 285 |
| Gln Phe Glu Lys Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile Leu Arg | | | | |
| | | 290 | | 295 |
| | | | | 300 |
| Ala Ala Glu Gly Val Thr Ile Ile Asp Asp Arg Ala Ser Asn Arg Phe | | | | |
| | | 305 | | 310 |
| | | | | 315 |
| Pro Thr Pro Leu Glu Val Ser Asp Lys Asp Asp Val Ala Val Gly Arg | | | | |
| | | 325 | | 330 |
| | | | | 335 |
| Ile Arg Gln Asp Leu Ser Gln Asp Asp Asn Lys Gly Leu Asp Ile Phe | | | | |
| | | 340 | | 345 |
| | | | | 350 |
| Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala Val Gln | | | | |
| | | 355 | | 360 |
| | | | | 365 |
| Ile Ala Glu Met Leu Leu Lys | | | | |
| | | 370 | | 375 |

<210> 46
 <211> 1391
 <212> DNA
 <213> Glycine max

<400> 46

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| cgccccaa | ccacctctc | ctcctcctcc | aggatccgaa | tgteccctcc | cgagaacggc | 120 |
| ccctccatcg | cgctcgtggg | cgtcaccggc | gccgtcggcc | aggagttcct | ctccgctctc | 180 |
| tccgaccgcg | acttccccta | cgctccatt | catatgctgg | cttccaagcg | ctccgctggc | 240 |
| cgccgcatca | ccttcgagga | cagggactac | gtcgtccagg | agctcacgcc | ggagagcttc | 300 |
| gacggtgtcg | acatcgcgct | cttcagcgcc | ggcggtctca | tcagcaagca | cttcggcccc | 360 |
| atcgccgtca | atcgtggaac | ggtcgtggtc | gacaacagct | ccgcgtttcg | gatgaacgag | 420 |
| aaggtgcctt | tggtaatcc | cgaagtgaac | cccgaagcaa | tgcaaaacat | caaagccgga | 480 |
| acgggaaagg | gcgcactcat | tgctaaccct | aattgctcca | ccatttatatg | cttgatggct | 540 |
| gctacccttc | ttcatcgacg | tgccaagggt | ttacgtatgg | ttgttagtac | ctatcaggct | 600 |
| gcgagtgggtg | ctgggtgctgc | tgcaatggaa | gagcttgagc | tgcaaaactcg | tgaggtggtg | 660 |
| gaaggaaaac | caccacttg | taaaatattt | aaccgacagt | atgcttttaa | tctattctca | 720 |
| cataatgcgt | ctgttctttc | aaatggatat | aatgaagaag | aaatgaaaat | ggtcaaggag | 780 |
| accaggaaaa | tctggaatga | caaggatgtt | aaagtaactg | ccacatgcat | acgagttccc | 840 |
| atcatgcgag | ctcatgctga | gagtgtgaat | cttcaatttg | aaagaccctt | tgatgaggac | 900 |
| actgcaagag | atattctgaa | aaatgctcca | ggtgtagtg | ttattgatga | tcgtgaatcc | 960 |
| aatcattttc | ctactccact | ggaagtgtca | aacaaggatg | atgttgctgt | tggtaggatt | 1020 |
| cggcaggacc | tgtctcagga | tgggaatcaa | gggttgga | tctttgtatg | tggggatcaa | 1080 |
| attcgcaagg | gagctgcact | taacgcaatc | cagattgctg | agatgttgct | atgagttctg | 1140 |
| gtttttcaag | gatctggtac | ttaaagatta | tgcttctttt | gaaacagttt | tgtatgtgct | 1200 |

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agttgtatgt gggtattcat ttcttttgtg atgtttaact agtccaagta tctttttcaac 1260
gatgtggtag cacactagct ggaaacagtt tttttaaggt cttggtgcgt aatatctgca 1320
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aaaaaaaaaa a

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1391

<210> 47

<211> 377

<212> PRT

<213> Glycine max

<400> 47

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Ala Arg Ala Ser Leu Ser Val Leu Arg His Asn His Leu Phe Ser Gly
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Pro Leu Pro Ala Arg Pro Lys Pro Thr Ser Ser Ser Ser Ser Arg Ile
          20              25              30

Arg Met Ser Leu Arg Glu Asn Gly Pro Ser Ile Ala Val Val Gly Val
          35              40              45

Thr Gly Ala Val Gly Gln Glu Phe Leu Ser Val Leu Ser Asp Arg Asp
  50              55              60

Phe Pro Tyr Arg Ser Ile His Met Leu Ala Ser Lys Arg Ser Ala Gly
  65              70              75              80

Arg Arg Ile Thr Phe Glu Asp Arg Asp Tyr Val Val Gln Glu Leu Thr
          85              90              95

Pro Glu Ser Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly
          100             105             110

Ser Ile Ser Lys His Phe Gly Pro Ile Ala Val Asn Arg Gly Thr Val
          115             120             125

Val Val Asp Asn Ser Ser Ala Phe Arg Met Asn Glu Lys Val Pro Leu
          130             135             140

Val Ile Pro Glu Val Asn Pro Glu Ala Met Gln Asn Ile Lys Ala Gly
          145             150             155             160

Thr Gly Lys Gly Ala Leu Ile Ala Asn Pro Asn Cys Ser Thr Ile Ile
          165             170             175

Cys Leu Met Ala Ala Thr Pro Leu His Arg Arg Ala Lys Val Leu Arg
          180             185             190

Met Val Val Ser Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Ala
          195             200             205

Met Glu Glu Leu Glu Leu Gln Thr Arg Glu Val Leu Glu Gly Lys Pro
          210             215             220

Pro Thr Cys Lys Ile Phe Asn Arg Gln Tyr Ala Phe Asn Leu Phe Ser
          225             230             235             240

His Asn Ala Ser Val Leu Ser Asn Gly Tyr Asn Glu Glu Glu Met Lys
          245             250             255

Met Val Lys Glu Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Lys Val
          260             265             270

```

Thr Ala Thr Cys Ile Arg Val Pro Ile Met Arg Ala His Ala Glu Ser
 275 280 285
 Val Asn Leu Gln Phe Glu Arg Pro Leu Asp Glu Asp Thr Ala Arg Asp
 290 295 300
 Ile Leu Lys Asn Ala Pro Gly Val Val Val Ile Asp Asp Arg Glu Ser
 305 310 315 320
 Asn His Phe Pro Thr Pro Leu Glu Val Ser Asn Lys Asp Asp Val Ala
 325 330 335
 Val Gly Arg Ile Arg Gln Asp Leu Ser Gln Asp Gly Asn Gln Gly Leu
 340 345 350
 Asp Ile Phe Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn
 355 360 365
 Ala Ile Gln Ile Ala Glu Met Leu Leu
 370 375

<210> 48
 <211> 1470
 <212> DNA
 <213> Glycine max

<400> 48
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 ccaagcccac ctctcctcc tctccagga tccgaatgtc cctccgcgag aacggccccct 180
 ccacgcgcgt cgtgggcgtc accggcgccg tcggccagga gttcctctcc gtcctctccg 240
 accgcgactt cccctaccgc tccattcata tgctggcttc caagcgctcc gctggccgcc 300
 gcatcacctt cgaggacagg gactacgtcg tccaggagct cacgccggag agcttcgacg 360
 gtgtcgacat cgcgctcttc agcgccggcg gctccatcag caagcacttc ggccccatcg 420
 ccgtcaatcg tggaaacggc gtggtcgaca acagctccgc gtttcggatg gacgagaagg 480
 tgcctttggt aattcccgaa gtgaaccccg aagcaatgca aaacatcaaa gccggaacgg 540
 gaaagggcgc actcattgct aaccctaatt gctccaccat tagatgcttg aaggctgcta 600
 cccctcttca tcgacgtgcc aagggtgttac gtatggttgt tagtacctat caggctgcca 660
 gtggtgctgg tgctgctgca atggaagagc ttgagctgca aactcgtgag gtgttggaag 720
 gaaaaccacc cacttgtaaa atatttaacc gacagtatgc ttttaatacta ttctcacata 780
 atgcgtctgt tctttcaaat ggatataatg aagaagaaat gaaaatggtc aaggagacca 840
 ggaataatctg gaatgacaag gatgttaaag taactgccac atgcatacga gttcccatca 900
 tgcgagctca tgctgagagt gtgaatcttc aatttgaaag accccttgat gaggacactg 960
 caagagatat tctgaaaaat gctccagggtg tagtggttat tgatgatcgt gaatccaatc 1020
 attttcctac tccactggaa gtgtcaaaca aggatgatgt tgctggtggt aggattcggc 1080
 aggacctgtc tcaggatggg aatcaagggt tggacatctt tgtatgtggg gatcaaatc 1140
 gcaagggagc tgcacttaac gcaatccaga ttgctgagat gttgctatga gttctgggtt 1200
 ttcaaggatc tggtaactaa agattatgct tcttttgaaa cagttttgta tgtgctagtt 1260
 gtatgtggtt attcatttct tttgtgatgt ttaactagtc caagtatctt ttcaacgatg 1320
 tggtagcaca ctagctggaa acagtttttt taagggtctt gtgcgtaata tctgcaatcc 1380
 ttttcaccgg gaataacaag cactggtttt ggcaaaaaaa aaaaaaaaaa aaaaaaaaaa 1440
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1470

<210> 49
 <211> 376
 <212> PRT
 <213> Glycine max

<400> 49
 Met Ala Ser Leu Ser Val Leu Arg His Asn His Leu Phe Ser Gly Pro

| 1 | 5 | 10 | 15 |
|-----------------|-----------------|-----------------|-----------------|
| Leu Pro Ala Arg | Pro Lys Pro Thr | Ser Ser Ser Ser | Ser Arg Ile Arg |
| 20 | | 25 | 30 |
| Met Ser Leu Arg | Glu Asn Gly Pro | Ser Ile Ala Val | Val Gly Val Thr |
| 35 | 40 | 45 | |
| Gly Ala Val Gly | Gln Glu Phe Leu | Ser Val Leu Ser | Asp Arg Asp Phe |
| 50 | 55 | 60 | |
| Pro Tyr Arg Ser | Ile His Met Leu | Ala Ser Lys Arg | Ser Ala Gly Arg |
| 65 | 70 | 75 | 80 |
| Arg Ile Thr Phe | Glu Asp Arg Asp | Tyr Val Val Gln | Glu Leu Thr Pro |
| 85 | 90 | 95 | |
| Glu Ser Phe Asp | Gly Val Asp Ile | Ala Leu Phe Ser | Ala Gly Gly Ser |
| 100 | 105 | 110 | |
| Ile Ser Lys His | Phe Gly Pro Ile | Ala Val Asn Arg | Gly Thr Val Val |
| 115 | 120 | 125 | |
| Val Asp Asn Ser | Ser Ala Phe Arg | Met Asp Glu Lys | Val Pro Leu Val |
| 130 | 135 | 140 | |
| Ile Pro Glu Val | Asn Pro Glu Ala | Met Gln Asn Ile | Lys Ala Gly Thr |
| 145 | 150 | 155 | 160 |
| Gly Lys Gly Ala | Leu Ile Ala Asn | Pro Asn Cys Ser | Thr Ile Arg Cys |
| 165 | 170 | 175 | |
| Leu Lys Ala Ala | Thr Pro Leu His | Arg Arg Ala Lys | Val Leu Arg Met |
| 180 | 185 | 190 | |
| Val Val Ser Thr | Tyr Gln Ala Ala | Ser Gly Ala Gly | Ala Ala Ala Met |
| 195 | 200 | 205 | |
| Glu Glu Leu Glu | Leu Gln Thr Arg | Glu Val Leu Glu | Gly Lys Pro Pro |
| 210 | 215 | 220 | |
| Thr Cys Lys Ile | Phe Asn Arg Gln | Tyr Ala Phe Asn | Leu Phe Ser His |
| 225 | 230 | 235 | 240 |
| Asn Ala Ser Val | Leu Ser Asn Gly | Tyr Asn Glu Glu | Glu Met Lys Met |
| 245 | 250 | 255 | |
| Val Lys Glu Thr | Arg Lys Ile Trp | Asn Asp Lys Asp | Val Lys Val Thr |
| 260 | 265 | 270 | |
| Ala Thr Cys Ile | Arg Val Pro Ile | Met Arg Ala His | Ala Glu Ser Val |
| 275 | 280 | 285 | |
| Asn Leu Gln Phe | Glu Arg Pro Leu | Asp Glu Asp Thr | Ala Arg Asp Ile |
| 290 | 295 | 300 | |
| Leu Lys Asn Ala | Pro Gly Val Val | Val Ile Asp Asp | Arg Glu Ser Asn |
| 305 | 310 | 315 | 320 |
| His Phe Pro Thr | Pro Leu Glu Val | Ser Asn Lys Asp | Asp Val Ala Val |
| 325 | 330 | 335 | |

Gly Arg Ile Arg Gln Asp Leu Ser Gln Asp Gly Asn Gln Gly Leu Asp
340 345 350

Ile Phe Val Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala
355 360 365

Ile Gln Ile Ala Glu Met Leu Leu
370 375

<210> 50
<211> 1609
<212> DNA
<213> Triticum aestivum

<400> 50
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gccgccgccg ccgcaatgca ggccgccgca gccgtccacc ggccacacct cctcgcggcg 120
tccccgctcg ggggccgcgc cagccgccgg ccctccacgg tccgcatggc gctccgcgag 180
gacggggcct ccgtggccat cgtgggcgcc accggcgccg tggggcagga gttcctccgc 240
gtcatcaccg cccgcgactt cccctaccgc agcctgcgcc tcctcgccag cgagcgctcc 300
gcgggcaagc gcatcgactt cgagggccgg gactacaccg tccaggacct cgcggcgcgc 360
ggggccttcg acggggtcga catcgcgctc ttcagcgccg gcgggagcat cagccgcgcc 420
cacgcgcccg ccgccgtcgc cagcggcgcc gtcgtcgtgg ataacagctc cgcctaccgg 480
atggaccccg acgtgccgct cgtcatcccg gaggttaacc ccgaggccat ggccgacgtc 540
cggctcggga aaggggctat tgtggccaac cccaactgtt ccaccatcat ctgcctcatg 600
gctgtcacgc cgctgcatcg ccacgccaag gtgaaaagga tggttgtcag cacataccaa 660
gcagcaagtg gtgctggtgc tgcagccatg gaagaactca aacttcagac tcgagaggtc 720
ttggaaggaa agccaccaac ctgtaacatt ttcagtcaac agtatgcttt taatatattt 780
tcgcataatg cacctattgt tgaaaatggc tataatgagg aagagatgaa aatggtgaag 840
gagaccagaa aaatctggaa tgacaaggat gtaagagtaa ctgcaacttg tatacgggtt 900
cctacgatgc gcgcgcatgc cgaaagcgtg aatctacagt ttgaaaagcc acttgatgag 960
gacactgcca gagaaatcct gagggcagct cctggtgtta ccattagtga cgaccgtgct 1020
gccaaccgct tccctacacc actggaggtg tcggataaag atgacgtatc agttggtagg 1080
attcgccagg acttgtcaca agatgataac agagggttgg agttatttgt ctgtggagac 1140
cagatacgta aaggcgccgc gctgaacgct gtgcagattg ctgaaatgct actgaagtga 1200
ccgccttttt accattgtct catgtgccac gttgctctat ccattgatgg attgatgtac 1260
tctagtcact ttcaaccagg ttttggtcgt cgtctttttt gtaatctgtc aacctagcag 1320
aagaagtgtg agacgggctt tagtcatctg ttgcacacaa aagtgcagcc acaagtttag 1380
aaaaggaggg ttttcaactg ttcggatttt gccttagggt ggactttgtt gcaagtttgt 1440
cgtttgtttc ttgaaagctg gtctgctgta actttacccc caaagccctc gagataacga 1500
ggcgctcctgt ggggacctaa aaaaaaaaaa aaaaaaaaaa aaaaaacccc aaaaaaaaaa 1560
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1609

<210> 51
<211> 374
<212> PRT
<213> Triticum aestivum

<400> 51
Met Gln Ala Ala Ala Ala Val His Arg Pro His Leu Leu Ala Ala Ser
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Pro Leu Gly Gly Arg Ala Ser Arg Arg Pro Ser Thr Val Arg Met Ala
20 25 30
Leu Arg Glu Asp Gly Pro Ser Val Ala Ile Val Gly Ala Thr Gly Ala
35 40 45
Val Gly Gln Glu Phe Leu Arg Val Ile Thr Ala Arg Asp Phe Pro Tyr
50 55 60

Arg Ser Leu Arg Leu Leu Ala Ser Glu Arg Ser Ala Gly Lys Arg Ile
 65 70 75 80
 Asp Phe Glu Gly Arg Asp Tyr Thr Val Gln Asp Leu Ala Ala Pro Gly
 85 90 95
 Ala Phe Asp Gly Val Asp Ile Ala Leu Phe Ser Ala Gly Gly Ser Ile
 100 105 110
 Ser Arg Ala His Ala Pro Ala Ala Val Ala Ser Gly Ala Val Val Val
 115 120 125
 Asp Asn Ser Ser Ala Tyr Arg Met Asp Pro Asp Val Pro Leu Val Ile
 130 135 140
 Pro Glu Val Asn Pro Glu Ala Met Ala Asp Val Arg Leu Gly Lys Gly
 145 150 155 160
 Ala Ile Val Ala Asn Pro Asn Cys Ser Thr Ile Ile Cys Leu Met Ala
 165 170 175
 Val Thr Pro Leu His Arg His Ala Lys Val Lys Arg Met Val Val Ser
 180 185 190
 Thr Tyr Gln Ala Ala Ser Gly Ala Gly Ala Ala Ala Met Glu Glu Leu
 195 200 205
 Lys Leu Gln Thr Arg Glu Val Leu Glu Gly Lys Pro Pro Thr Cys Asn
 210 215 220
 Ile Phe Ser Gln Gln Tyr Ala Phe Asn Ile Phe Ser His Asn Ala Pro
 225 230 235 240
 Ile Val Glu Asn Gly Tyr Asn Glu Glu Glu Met Lys Met Val Lys Glu
 245 250 255
 Thr Arg Lys Ile Trp Asn Asp Lys Asp Val Arg Val Thr Ala Thr Cys
 260 265 270
 Ile Arg Val Pro Thr Met Arg Ala His Ala Glu Ser Val Asn Leu Gln
 275 280 285
 Phe Glu Lys Pro Leu Asp Glu Asp Thr Ala Arg Glu Ile Leu Arg Ala
 290 295 300
 Ala Pro Gly Val Thr Ile Ser Asp Asp Arg Ala Ala Asn Arg Phe Pro
 305 310 315 320
 Thr Pro Leu Glu Val Ser Asp Lys Asp Asp Val Ser Val Gly Arg Ile
 325 330 335
 Arg Gln Asp Leu Ser Gln Asp Asp Asn Arg Gly Leu Glu Leu Phe Val
 340 345 350
 Cys Gly Asp Gln Ile Arg Lys Gly Ala Ala Leu Asn Ala Val Gln Ile
 355 360 365
 Ala Glu Met Leu Leu Lys
 370

<210> 52
<211> 340
<212> PRT
<213> Aquifex aeolicus

<400> 52

Met Gly Tyr Arg Val Ala Ile Val Gly Ala Thr Gly Glu Val Gly Arg
1 5 10 15
Thr Phe Leu Lys Val Leu Glu Glu Arg Asn Phe Pro Val Asp Glu Leu
20 25 30
Val Leu Tyr Ala Ser Glu Arg Ser Glu Gly Lys Val Leu Thr Phe Lys
35 40 45
Gly Lys Glu Tyr Thr Val Lys Ala Leu Asn Lys Glu Asn Ser Phe Lys
50 55 60
Gly Ile Asp Ile Ala Leu Phe Ser Ala Gly Gly Ser Thr Ser Lys Glu
65 70 75 80
Trp Ala Pro Lys Phe Ala Lys Asp Gly Val Val Val Ile Asp Asn Ser
85 90 95
Ser Ala Trp Arg Met Asp Pro Asp Val Pro Leu Val Val Pro Glu Val
100 105 110
Asn Pro Glu Asp Val Lys Asp Phe Lys Lys Lys Gly Ile Ile Ala Asn
115 120 125
Pro Asn Cys Ser Thr Ile Gln Met Val Val Ala Leu Lys Pro Ile Tyr
130 135 140
Asp Lys Ala Gly Ile Lys Arg Val Val Val Ser Thr Tyr Gln Ala Val
145 150 155 160
Ser Gly Ala Gly Ala Lys Ala Ile Glu Asp Leu Lys Asn Gln Thr Lys
165 170 175
Ala Trp Cys Glu Gly Lys Glu Met Pro Lys Ala Gln Lys Phe Pro His
180 185 190
Gln Ile Ala Phe Asn Ala Leu Pro His Ile Asp Val Phe Phe Glu Asp
195 200 205
Gly Tyr Thr Lys Glu Glu Asn Lys Met Leu Tyr Glu Thr Arg Lys Ile
210 215 220
Met His Asp Glu Asn Ile Lys Val Ser Ala Thr Cys Val Arg Ile Pro
225 230 235 240
Val Phe Tyr Gly His Ser Glu Ser Ile Ser Met Glu Thr Glu Lys Glu
245 250 255
Ile Ser Pro Glu Glu Ala Arg Glu Val Leu Lys Asn Ala Pro Gly Val
260 265 270
Ile Val Ile Asp Asn Pro Gln Asn Asn Glu Tyr Pro Met Pro Ile Met
275 280 285
Ala Glu Gly Arg Asp Glu Val Phe Val Gly Arg Ile Arg Lys Asp Arg

290 295 300

Val Phe Glu Pro Gly Leu Ser Met Trp Val Val Ala Asp Asn Ile Arg
 305 310 315 320

Lys Gly Ala Ala Thr Asn Ala Val Gln Ile Ala Glu Leu Leu Val Lys
 325 330 335

Glu Gly Leu Ile
 340

<210> 53
 <211> 1727
 <212> DNA
 <213> Glycine max

<400> 53

| | | | | | | |
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| ttgcaacaca | cattgtcttg | tcggcaaaat | cttccaccaa | caacacacag | ccatggcagg | 60 |
| ctcaaacatt | ctttctcact | ctccttccct | tcccaaaacc | tacagccact | ccttaaacca | 120 |
| aaacgcgtta | tcccaaaagc | ttttttttct | gccccctcaa | ttcaaagcca | ccacaaaacc | 180 |
| acgtgctctc | agagcgggtc | tctcgcagaa | cgctgtcaaa | acctcgggtg | aggacacaaa | 240 |
| gaacgctcat | tttcagcact | gtttcaccaa | atccgaagat | gggtatctgt | actgtgaggg | 300 |
| cctcaagggtg | catgacatca | tggaatctgt | tgagagaaga | cctttctatt | tgtacagcaa | 360 |
| gccccagata | actaggaatg | ttgaagccta | caaggatgca | ttggaagggt | tgaactccat | 420 |
| aattgggttat | gccattaagg | ccaataataa | cttgaagatt | ttggaacatt | tgaggcactt | 480 |
| gggttggtggt | gctgtgcttg | ttagtgggaa | tgagctgaag | ttggctcttc | gagctggctt | 540 |
| tgatcccaca | aggtgtatct | ttaatgggaa | tgggaaaatc | ttggaggatt | tggtcctggc | 600 |
| tgctcaggaa | ggtgtgtttg | tcaacattga | tagtgagttt | gacttggaaa | acattgtaga | 660 |
| ggctgcacaaa | agggctggga | agaagggtcaa | tgttttactt | cggattaatc | ctgatgtgga | 720 |
| tccacagggtt | catccttatg | ttgccactgg | gaataagaac | tctaaatttg | gcattagaaa | 780 |
| tgagaagctg | cagtgtctttt | tagatgcagt | gaaggaacat | cctaattgagc | tcaaacttgt | 840 |
| agggggccac | tgccatcttg | gttcaacaat | taccaagggt | gacattttca | gggatgcagc | 900 |
| caccattatg | atcaactaca | ttgaccaaat | ccgagatcag | ggttttgaag | ttgattactt | 960 |
| aaatattggt | ggaggacttg | ggatagatta | ttatcattct | ggtgccatcc | ttcctacacc | 1020 |
| tagagatctc | attgacactg | tacgagatct | tgttattttca | cgtgggtctta | atctcatcat | 1080 |
| tgaaccagga | agatcactca | ttgcaaacac | gtgttgctta | gttaaccggg | tgacagggtgt | 1140 |
| taaaactaat | ggatctaaaa | acttcattgt | aattgatgga | agtatggctg | aacttatccg | 1200 |
| ccctagtctt | tatgatgctt | accagcatat | agagctgggt | tcccctgccc | cgtcaaatgc | 1260 |
| tgaacagaa | acttttgatg | tggttgcccc | tgtctgtgag | tctgcagatt | tcttaggaaa | 1320 |
| aggaagagaa | cttcctactc | cagccaaggg | tactggtttg | gttggttcacg | atgctggtgc | 1380 |
| ttattgcatg | agcatggcat | caacctacaa | tctaaagatg | cggcctcctg | agtattgggt | 1440 |
| tgaagatgat | ggatcagtga | gcaaaataag | acatggagag | acttttgaag | accacattcg | 1500 |
| gttttttgag | gggctttgag | ctaataatth | atcttgtagg | aaagaaggct | ggagaattgt | 1560 |
| tatgtacttg | gagtttgaat | ctttcctcgt | caatgaatgc | atgactcttg | tagttctgtt | 1620 |
| tcttcggttc | taattgaatg | ttgactccca | tgacaggaac | agagaataaa | gttgattttca | 1680 |
| gttaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaa | | 1727 |

<210> 54
 <211> 505
 <212> PRT
 <213> Glycine max

<400> 54

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Asn | Thr | His | Cys | Leu | Val | Gly | Lys | Ile | Phe | His | Gln | Gln | His | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Met | Ala | Gly | Ser | Asn | Ile | Leu | Ser | His | Ser | Pro | Ser | Leu | Pro | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Tyr | Ser | His | Ser | Leu | Asn | Gln | Asn | Ala | Leu | Ser | Gln | Lys | Leu | Phe |
| | | | 35 | | | | 40 | | | | | 45 | | | |

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Pro | Leu | Lys | Phe | Lys | Ala | Thr | Thr | Lys | Pro | Arg | Ala | Leu | Arg | 50 | 55 | 60 | |
| Ala | Val | Leu | Ser | Gln | Asn | Ala | Val | Lys | Thr | Ser | Val | Glu | Asp | Thr | Lys | 65 | 70 | 75 | 80 |
| Asn | Ala | His | Phe | Gln | His | Cys | Phe | Thr | Lys | Ser | Glu | Asp | Gly | Tyr | Leu | 85 | 90 | 95 | |
| Tyr | Cys | Glu | Gly | Leu | Lys | Val | His | Asp | Ile | Met | Glu | Ser | Val | Glu | Arg | 100 | 105 | 110 | |
| Arg | Pro | Phe | Tyr | Leu | Tyr | Ser | Lys | Pro | Gln | Ile | Thr | Arg | Asn | Val | Glu | 115 | 120 | 125 | |
| Ala | Tyr | Lys | Asp | Ala | Leu | Glu | Gly | Leu | Asn | Ser | Ile | Ile | Gly | Tyr | Ala | 130 | 135 | 140 | |
| Ile | Lys | Ala | Asn | Asn | Asn | Leu | Lys | Ile | Leu | Glu | His | Leu | Arg | His | Leu | 145 | 150 | 155 | 160 |
| Gly | Cys | Gly | Ala | Val | Leu | Val | Ser | Gly | Asn | Glu | Leu | Lys | Leu | Ala | Leu | 165 | 170 | 175 | |
| Arg | Ala | Gly | Phe | Asp | Pro | Thr | Arg | Cys | Ile | Phe | Asn | Gly | Asn | Gly | Lys | 180 | 185 | 190 | |
| Ile | Leu | Glu | Asp | Leu | Val | Leu | Ala | Ala | Gln | Glu | Gly | Val | Phe | Val | Asn | 195 | 200 | 205 | |
| Ile | Asp | Ser | Glu | Phe | Asp | Leu | Glu | Asn | Ile | Val | Glu | Ala | Ala | Lys | Arg | 210 | 215 | 220 | |
| Ala | Gly | Lys | Lys | Val | Asn | Val | Leu | Leu | Arg | Ile | Asn | Pro | Asp | Val | Asp | 225 | 230 | 235 | 240 |
| Pro | Gln | Val | His | Pro | Tyr | Val | Ala | Thr | Gly | Asn | Lys | Asn | Ser | Lys | Phe | 245 | 250 | 255 | |
| Gly | Ile | Arg | Asn | Glu | Lys | Leu | Gln | Cys | Phe | Leu | Asp | Ala | Val | Lys | Glu | 260 | 265 | 270 | |
| His | Pro | Asn | Glu | Leu | Lys | Leu | Val | Gly | Ala | His | Cys | His | Leu | Gly | Ser | 275 | 280 | 285 | |
| Thr | Ile | Thr | Lys | Val | Asp | Ile | Phe | Arg | Asp | Ala | Ala | Thr | Ile | Met | Ile | 290 | 295 | 300 | |
| Asn | Tyr | Ile | Asp | Gln | Ile | Arg | Asp | Gln | Gly | Phe | Glu | Val | Asp | Tyr | Leu | 305 | 310 | 315 | 320 |
| Asn | Ile | Gly | Gly | Gly | Leu | Gly | Ile | Asp | Tyr | Tyr | His | Ser | Gly | Ala | Ile | 325 | 330 | 335 | |
| Leu | Pro | Thr | Pro | Arg | Asp | Leu | Ile | Asp | Thr | Val | Arg | Asp | Leu | Val | Ile | 340 | 345 | 350 | |
| Ser | Arg | Gly | Leu | Asn | Leu | Ile | Ile | Glu | Pro | Gly | Arg | Ser | Leu | Ile | Ala | 355 | 360 | 365 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Thr | Cys | Cys | Leu | Val | Asn | Arg | Val | Thr | Gly | Val | Lys | Thr | Asn | Gly |
| 370 | | | | | | 375 | | | | | 380 | | | | |
| Ser | Lys | Asn | Phe | Ile | Val | Ile | Asp | Gly | Ser | Met | Ala | Glu | Leu | Ile | Arg |
| 385 | | | | 390 | | | | | 395 | | | | | 400 | |
| Pro | Ser | Leu | Tyr | Asp | Ala | Tyr | Gln | His | Ile | Glu | Leu | Val | Ser | Pro | Ala |
| | | | 405 | | | | | 410 | | | | | | 415 | |
| Pro | Ser | Asn | Ala | Glu | Thr | Glu | Thr | Phe | Asp | Val | Val | Gly | Pro | Val | Cys |
| | | 420 | | | | | | 425 | | | | | 430 | | |
| Glu | Ser | Ala | Asp | Phe | Leu | Gly | Lys | Gly | Arg | Glu | Leu | Pro | Thr | Pro | Ala |
| | 435 | | | | | 440 | | | | | | 445 | | | |
| Lys | Gly | Thr | Gly | Leu | Val | Val | His | Asp | Ala | Gly | Ala | Tyr | Cys | Met | Ser |
| 450 | | | | | 455 | | | | | | 460 | | | | |
| Met | Ala | Ser | Thr | Tyr | Asn | Leu | Lys | Met | Arg | Pro | Pro | Glu | Tyr | Trp | Val |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Glu | Asp | Asp | Gly | Ser | Val | Ser | Lys | Ile | Arg | His | Gly | Glu | Thr | Phe | Glu |
| | | | 485 | | | | | | 490 | | | | | 495 | |
| Asp | His | Ile | Arg | Phe | Phe | Glu | Gly | Leu | | | | | | | |
| | | 500 | | | | | | 505 | | | | | | | |

<210> 55
 <211> 858
 <212> DNA
 <213> Triticum aestivum

<400> 55
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 gcagtcttgc ctacacctat ggatcttata aacactgtcc gggaattggt cctctcacgg 120
 gatcttactc tcattattga acctggaaga tccctgatcg ccaatacttg ctgcttcgtc 180
 aataaggtca ctggtgtaaa atcgaatggc acgaagaatt tcattgtagt tgatggcagc 240
 atggccgagc tcatcaggcc tagtctatat ggagcatatc agcatataga actagtttct 300
 ccctctccag gtgcagaagt agcaaccttc gatattgttg ggccagtctg cgaatctgca 360
 gatttccttg gcaaagacag ggagcttcca acacctgaca agggagctgg tttggttgtc 420
 cacgacgcag gaggctactg catgagcatg gcttcgacct acaacctgaa gatgaggcca 480
 gccgagtatt gggtagagga cgatgggtcc attgttaaga tcaggcacgg tgaaacattt 540
 gacgactaca tgaagttctt tgatgggtctt cctgcctagg cccttttatc ttgttttggg 600
 caagcgtagc ccttttcatt tgatgagcgc atctcgtgga agattcgtgt gggaaaacta 660
 ttcacttggt tgttatgttg gtcattccca tcaagcatgg gggtttttat ttgttagaat 720
 agagtccaac aagtttagtg attgtagaga ttgaatggac ttactgcatt gttatcaatt 780
 cttgtttata ctatataaag ggtccgactc ctcccaataa agttaaagaa tattgttggt 840
 tacttttatc taaaaaaaa 858

<210> 56
 <211> 192
 <212> PRT
 <213> Triticum aestivum

<400> 56
 Phe Glu Leu Glu Tyr Leu Asn Ile Gly Gly Gly Leu Gly Ile Asp Tyr
 1 5 10 15
 His His Thr Gly Ala Val Leu Pro Thr Pro Met Asp Leu Ile Asn Thr
 20 25 30

Val Arg Glu Leu Val Leu Ser Arg Asp Leu Thr Leu Ile Ile Glu Pro
 35 40 45
 Gly Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe Val Asn Lys Val Thr
 50 55 60
 Gly Val Lys Ser Asn Gly Thr Lys Asn Phe Ile Val Val Asp Gly Ser
 65 70 75 80
 Met Ala Glu Leu Ile Arg Pro Ser Leu Tyr Gly Ala Tyr Gln His Ile
 85 90 95
 Glu Leu Val Ser Pro Ser Pro Gly Ala Glu Val Ala Thr Phe Asp Ile
 100 105 110
 Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp Arg Glu
 115 120 125
 Leu Pro Thr Pro Asp Lys Gly Ala Gly Leu Val Val His Asp Ala Gly
 130 135 140
 Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Met Arg Pro
 145 150 155 160
 Ala Glu Tyr Trp Val Glu Asp Asp Gly Ser Ile Val Lys Ile Arg His
 165 170 175
 Gly Glu Thr Phe Asp Asp Tyr Met Lys Phe Phe Asp Gly Leu Pro Ala
 180 185 190

<210> 57
 <211> 526
 <212> PRT
 <213> Arabidopsis thaliana

<400> 57
 Met Gly Gln Thr Asn Ser Glu Thr Gln Gln Ala Arg Leu Tyr Thr Gln
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 Asn Ser Gln Lys Gln Leu Leu Arg Ser Phe Leu Leu Leu His Leu Ile
 20 25 30
 Phe Gly Tyr Gln Ser His Lys Thr Leu Arg Met Ala Ala Ala Thr Gln
 35 40 45
 Phe Leu Ser Gln Pro Ser Ser Leu Asn Pro His Gln Leu Lys Asn Gln
 50 55 60
 Thr Ser Gln Arg Ser Arg Ser Ile Pro Val Leu Ser Leu Lys Ser Thr
 65 70 75 80
 Leu Lys Pro Leu Lys Arg Leu Ser Val Lys Ala Ala Val Val Ser Gln
 85 90 95
 Asn Ser Ser Lys Thr Val Thr Lys Phe Asp His Cys Phe Lys Lys Ser
 100 105 110
 Ser Asp Gly Phe Leu Tyr Cys Glu Gly Thr Lys Val Glu Asp Ile Met
 115 120 125
 Glu Ser Val Glu Arg Arg Pro Phe Tyr Leu Tyr Ser Lys Pro Gln Ile

| 130 | 135 | 140 |
|--|-----|-----|
| Thr Arg Asn Leu Glu Ala Tyr Lys Glu Ala Leu Glu Gly Val Ser Ser 145 150 155 160 | | |
| Val Ile Gly Tyr Ala Ile Lys Ala Asn Asn Asn Leu Lys Ile Leu Glu 165 170 175 | | |
| His Leu Arg Ser Leu Gly Cys Gly Ala Val Leu Val Ser Gly Asn Glu 180 185 190 | | |
| Leu Arg Leu Ala Leu Arg Ala Gly Phe Asp Pro Thr Lys Cys Ile Phe 195 200 205 | | |
| Asn Gly Asn Gly Lys Ser Leu Glu Asp Leu Val Leu Ala Ala Gln Glu 210 215 220 | | |
| Gly Val Phe Val Asn Val Asp Ser Glu Phe Asp Leu Asn Asn Ile Val 225 230 235 240 | | |
| Glu Ala Ser Arg Ile Ser Gly Lys Gln Val Asn Val Leu Leu Arg Ile 245 250 255 | | |
| Asn Pro Asp Val Asp Pro Gln Val His Pro Tyr Val Ala Thr Gly Asn 260 265 270 | | |
| Lys Asn Ser Lys Phe Gly Ile Arg Asn Glu Lys Leu Gln Trp Phe Leu 275 280 285 | | |
| Asp Gln Val Lys Ala His Pro Lys Glu Leu Lys Leu Val Gly Ala His 290 295 300 | | |
| Cys His Leu Gly Ser Thr Ile Thr Lys Val Asp Ile Phe Arg Asp Ala 305 310 315 320 | | |
| Ala Val Leu Met Ile Glu Tyr Ile Asp Glu Ile Arg Arg Gln Gly Phe 325 330 335 | | |
| Glu Val Ser Tyr Leu Asn Ile Gly Gly Gly Leu Gly Ile Asp Tyr Tyr 340 345 350 | | |
| His Ala Gly Ala Val Leu Pro Thr Pro Met Asp Leu Ile Asn Thr Val 355 360 365 | | |
| Arg Glu Leu Val Leu Ser Arg Asp Leu Asn Leu Ile Ile Glu Pro Gly 370 375 380 | | |
| Arg Ser Leu Ile Ala Asn Thr Cys Cys Phe Val Asn His Val Thr Gly 385 390 395 400 | | |
| Val Lys Thr Asn Gly Thr Lys Asn Phe Ile Val Ile Asp Gly Ser Met 405 410 415 | | |
| Ala Glu Leu Ile Arg Pro Ser Leu Tyr Asp Ala Tyr Gln His Ile Glu 420 425 430 | | |
| Leu Val Ser Pro Pro Pro Ala Glu Ala Glu Val Thr Lys Phe Asp Val 435 440 445 | | |
| Val Gly Pro Val Cys Glu Ser Ala Asp Phe Leu Gly Lys Asp Arg Glu 450 455 460 | | |

Leu Pro Thr Pro Pro Gln Gly Ala Gly Leu Val Val His Asp Ala Gly
 465 470 475 480

Ala Tyr Cys Met Ser Met Ala Ser Thr Tyr Asn Leu Lys Met Arg Pro
 485 490 495

Pro Glu Tyr Trp Val Glu Glu Asp Gly Ser Ile Thr Lys Ile Arg His
 500 505 510

Ala Glu Thr Phe Asp Asp His Leu Arg Phe Phe Glu Gly Leu
 515 520 525

<210> 58
 <211> 1143
 <212> DNA
 <213> Oryza sativa

<400> 58
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 cgccgcccgt gccaaaggcc ttgacgccct ctccggctcc ctccctacacc aagatgacct 180
 cgctcctcgc ggccctcgagt ccgagaaaag cgtcagtggc ttccacgccg acaacatcgc 240
 cccggccatc ctcggcgggt tgcctcctcg ccgcagctac gaccccttcc acctcatccc 300
 gctctcctcc ccacctgccc tccgcctcca ctctcgtctc gtcacgcccg acttcgaggc 360
 gccaccagc aagatgcgtg ccgcgctgcc caaacagggt gccgtccacc agcacgtccg 420
 caactccagc caagcggccg cgcttgctgc cgctgtgctg caaggggacg ccaccctcat 480
 cggtccgc atgtcctccg acggcatcgt ggagccaacc agggcgccgc tgattcctgg 540
 catggctgc gtcaaggccg cggcggttga agctggggca ttgggctgca ccatcagtgg 600
 agcagggcca actgctgtgg ctgtcattga cggggaggag aagggcgagg aggttgggccg 660
 gaggatggtg gaggcattcg ccaatgcccg caatctcaaa gcaacagcta ctgttgctca 720
 gctcgataga gttggtgcca gggttatctc tacctccact ttggagtagg aagatctggg 780
 aggactgctc cggtaggtca aatttggaat ggctcacatg gacactagtg ggaggagaag 840
 aaggggggat tgggtgtgtt tgtaatctc gggtgacca gaacgattgt cagtcagttg 900
 ggttgatgaat tgtgtgatgt agtagcaaac tgattcgtgc cggcaattga attgcaataa 960
 gctagtgtgt gcagcatcac ctggcgaggc gtagctagga gatgcagaaa cagcattttg 1020
 acatgtgtgt gtgttgacat gcaacgaata aaatgaatga agctgaattg gggtttataa 1080
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaata 1140
 aaa 1143

<210> 59
 <211> 255
 <212> PRT
 <213> Oryza sativa

<400> 59
 His Glu Val Ala Ala Ile Ala Ala Leu Arg Ala Leu Asp Val Lys Ser
 1 5 10 15
 His Ala Val Ser Ile His Leu Thr Lys Gly Leu Pro Leu Gly Ser Gly
 20 25 30
 Leu Gly Ser Ser Ala Ala Ser Ala Ala Ala Ala Lys Ala Val Asp
 35 40 45
 Ala Leu Phe Gly Ser Leu Leu His Gln Asp Asp Leu Val Leu Ala Gly
 50 55 60
 Leu Glu Ser Glu Lys Ala Val Ser Gly Phe His Ala Asp Asn Ile Ala
 65 70 75 80

Pro Ala Ile Leu Gly Gly Phe Val Leu Val Arg Ser Tyr Asp Pro Phe
 85 90 95
 His Leu Ile Pro Leu Ser Ser Pro Pro Ala Leu Arg Leu His Phe Val
 100 105 110
 Leu Val Thr Pro Asp Phe Glu Ala Pro Thr Ser Lys Met Arg Ala Ala
 115 120 125
 Leu Pro Lys Gln Val Ala Val His Gln His Val Arg Asn Ser Ser Gln
 130 135 140
 Ala Ala Ala Leu Val Ala Ala Val Leu Gln Gly Asp Ala Thr Leu Ile
 145 150 155 160
 Gly Ser Ala Met Ser Ser Asp Gly Ile Val Glu Pro Thr Arg Ala Pro
 165 170 175
 Leu Ile Pro Gly Met Ala Ala Val Lys Ala Ala Ala Leu Glu Ala Gly
 180 185 190
 Ala Leu Gly Cys Thr Ile Ser Gly Ala Gly Pro Thr Ala Val Ala Val
 195 200 205
 Ile Asp Gly Glu Glu Lys Gly Glu Glu Val Gly Arg Arg Met Val Glu
 210 215 220
 Ala Phe Ala Asn Ala Gly Asn Leu Lys Ala Thr Ala Thr Val Ala Gln
 225 230 235 240
 Leu Asp Arg Val Gly Ala Arg Val Ile Ser Thr Ser Thr Leu Glu
 245 250 255

<210> 60
 <211> 370
 <212> PRT
 <213> Arabidopsis thaliana

<400> 60
 Met Ala Ser Leu Cys Phe Gln Ser Pro Ser Lys Pro Ile Ser Tyr Phe
 1 5 10 15
 Gln Pro Lys Ser Asn Pro Ser Pro Pro Leu Phe Ala Lys Val Ser Val
 20 25 30
 Phe Arg Cys Arg Ala Ser Val Gln Thr Leu Val Ala Val Glu Pro Glu
 35 40 45
 Pro Val Phe Val Ser Val Lys Thr Phe Ala Pro Ala Thr Val Ala Asn
 50 55 60
 Leu Gly Pro Gly Phe Asp Phe Leu Gly Cys Ala Val Asp Gly Leu Gly
 65 70 75 80
 Asp His Val Thr Leu Arg Val Asp Pro Ser Val Arg Ala Gly Glu Val
 85 90 95
 Ser Ile Ser Glu Ile Thr Gly Thr Thr Thr Lys Leu Ser Thr Asn Pro
 100 105 110
 Leu Arg Asn Cys Ala Gly Ile Ala Ala Ile Ala Thr Met Lys Met Leu

| 115 | | | | | 120 | | | | | 125 | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Arg | Ser | Val | Gly | Leu | Ser | Leu | Asp | Leu | His | Lys | Gly | Leu | Pro |
| 130 | | | | | 135 | | | | | 140 | | | | | |
| Leu | Gly | Ser | Gly | Leu | Gly | Ser | Ser | Ala | Ala | Ser | Ala | Ala | Ala | Ala | Ala |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Val | Ala | Val | Asn | Glu | Ile | Phe | Gly | Arg | Lys | Leu | Gly | Ser | Asp | Gln | Leu |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Val | Leu | Ala | Gly | Leu | Glu | Ser | Glu | Ala | Lys | Val | Ser | Gly | Tyr | His | Ala |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Asp | Asn | Ile | Ala | Pro | Ala | Ile | Met | Gly | Gly | Phe | Val | Leu | Ile | Arg | Asn |
| | 195 | | | | | | 200 | | | | | 205 | | | |
| Tyr | Glu | Pro | Leu | Asp | Leu | Lys | Pro | Leu | Lys | Phe | Pro | Ser | Asp | Lys | Asp |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Leu | Phe | Phe | Val | Leu | Val | Ser | Pro | Glu | Phe | Glu | Ala | Pro | Thr | Lys | Lys |
| 225 | | | | | | 230 | | | | | 235 | | | | 240 |
| Met | Arg | Ala | Ala | Leu | Pro | Thr | Glu | Ile | Pro | Met | Val | His | His | Val | Trp |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Ser | Ser | Gln | Ala | Ala | Ala | Leu | Val | Ala | Ala | Val | Leu | Glu | Gly | Asp |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Val | Met | Leu | Gly | Lys | Ala | Leu | Ser | Ser | Asp | Lys | Ile | Val | Glu | Pro |
| | | | 275 | | | | 280 | | | | | 285 | | | |
| Thr | Arg | Ala | Pro | Leu | Ile | Pro | Gly | Met | Glu | Ala | Val | Lys | Lys | Ala | Ala |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Leu | Glu | Ala | Gly | Ala | Phe | Gly | Cys | Thr | Ile | Ser | Gly | Ala | Gly | Pro | Thr |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Ala | Val | Ala | Val | Ile | Asp | Ser | Glu | Glu | Lys | Gly | Gln | Val | Ile | Gly | Glu |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Lys | Met | Val | Glu | Ala | Phe | Trp | Lys | Val | Gly | His | Leu | Lys | Ser | Val | Ala |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Ser | Val | Lys | Lys | Leu | Asp | Lys | Val | Gly | Ala | Arg | Leu | Val | Asn | Ser | Val |
| | | 355 | | | | | 360 | | | | | 365 | | | |

Ser Arg
370

<210> 61
 <211> 1508
 <212> DNA
 <213> Zea mays

<400> 61
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 cggccccttc ccgagcggag ggcagcggct cgcgccgtgt ccgtcgctcg tccgcggaac 120
 tcccgcctcg acgtcgtcc tcaggctcca cccggacggc cgtggccatg gcctcctcgc 180
 gcacaccggc ccctctccct cctcgcggtg ccgcgccgtc gccgccgagg tcgggggcct 240
 caacatcgcc aacgacgtca ccagctcat cggcaacaca ccaatggtgt atctcaacaa 300

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cgctcgtaag ggctctgtcg ccaatgtcgc tgctaagctc gagattatgg agccctgctg 360
tagcgtcaag gacaggatag ggtacagtat gataaatgat gctgaacaga agggcttgat 420
tactcctgga aagagtgttt tgggtggaagc aacaagtgga aacacaggca ttgggtcttg 480
tttcattgct gcttccaaag gatataagct gatactaaca atgccttcat caatgagcat 540
ggagagaaga gtcctcctta gagcttttgg tgccgaactt gtccttactg atgctgcaaa 600
agggatgaaa ggggccttag ataaggctac agagatttta aacaagacac caaattctta 660
catgcttcaa cagttcgata accctgccaa ccctcaggta cattatgaga ctactggtcc 720
agagatctgg gaggattcaa aggggaaggt ggatatattc attggtggaa ttggaacagg 780
ggggacaata tctggtgccg gccgttttct caaggagaaa aatcctggaa ttaaggttat 840
tggtattgag ccttctgaaa gtaacatact ctccggtgga aaacctgggc cacataagat 900
ccagggaatc ggcgcaggat ttgttccaag gaacttggat agcgatattc ttgatgaagt 960
aattgagata tcaagtgatg aagctgttga gacagcaaaa cagttggctg ttcaggaagg 1020
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accagagaat gctggaaagc tgatagtggg tgtgtttccg agcttcggcg agaggtacct 1140
ttcatctgtc ctctatcagt ccataagaga agaatgtgag aacatgcaac ctgagccatg 1200
agggagccgt cactttaagc gggcatagta aatgtttctg aaataagacg cgtagccagc 1260
atcagtttgc tccacttgga atcatttggc catgctcact ctatcctttc gctagcctct 1320
atgaccggac ctaaactggg gtgtgagaaa catccacgac tgtcctccca actgctttcc 1380
taaagccaaa cgataacact ctcaataatt gtctatacga ttgaagctga tttgattggg 1440
aattgtaaac agcttgtcct tggatctttg aagtcaaaca aagtcagttg gttgaatcaa 1500
aaaaaaaaa
1508

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<210> 62
<211> 398
<212> PRT
<213> Zea mays

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<400> 62
Met Ala Ser Trp Ser Ser Pro Ser Ala Ala Ala Asn Ala Ala Ser Gly
  1              5              10              15

Ala Arg Phe Gly Pro Phe Pro Ser Gly Gly Gln Arg Leu Ala Pro Cys
      20              25              30

Pro Ser Leu Val Arg Gly Thr Pro Ala Pro Thr Leu Val Leu Arg Leu
      35              40              45

His Pro Asp Gly Arg Gly His Gly Leu Leu Ala His Thr Gly Pro Ser
      50              55              60

Pro Ser Ser Arg Cys Arg Ala Val Ala Ala Glu Val Gly Gly Leu Asn
      65              70              75              80

Ile Ala Asn Asp Val Thr Gln Leu Ile Gly Asn Thr Pro Met Val Tyr
      85              90              95

Leu Asn Asn Val Val Lys Gly Ser Val Ala Asn Val Ala Ala Lys Leu
      100             105             110

Glu Ile Met Glu Pro Cys Cys Ser Val Lys Asp Arg Ile Gly Tyr Ser
      115             120             125

Met Ile Asn Asp Ala Glu Gln Lys Gly Leu Ile Thr Pro Gly Lys Ser
      130             135             140

Val Leu Val Glu Ala Thr Ser Gly Asn Thr Gly Ile Gly Leu Ala Phe
      145             150             155             160

Ile Ala Ala Ser Lys Gly Tyr Lys Leu Ile Leu Thr Met Pro Ser Ser
      165             170             175

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Met Ser Met Glu Arg Arg Val Leu Leu Arg Ala Phe Gly Ala Glu Leu
 180 185 190
 Val Leu Thr Asp Ala Ala Lys Gly Met Lys Gly Ala Leu Asp Lys Ala
 195 200 205
 Thr Glu Ile Leu Asn Lys Thr Pro Asn Ser Tyr Met Leu Gln Gln Phe
 210 215 220
 Asp Asn Pro Ala Asn Pro Gln Val His Tyr Glu Thr Thr Gly Pro Glu
 225 230 235 240
 Ile Trp Glu Asp Ser Lys Gly Lys Val Asp Ile Phe Ile Gly Gly Ile
 245 250 255
 Gly Thr Gly Gly Thr Ile Ser Gly Ala Gly Arg Phe Leu Lys Glu Lys
 260 265 270
 Asn Pro Gly Ile Lys Val Ile Gly Ile Glu Pro Ser Glu Ser Asn Ile
 275 280 285
 Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln Gly Ile Gly Ala
 290 295 300
 Gly Phe Val Pro Arg Asn Leu Asp Ser Asp Ile Leu Asp Glu Val Ile
 305 310 315 320
 Glu Ile Ser Ser Asp Glu Ala Val Glu Thr Ala Lys Gln Leu Ala Val
 325 330 335
 Gln Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala Ala Ala Ala Ala
 340 345 350
 Ala Ile Lys Val Ala Lys Arg Pro Glu Asn Ala Gly Lys Leu Ile Val
 355 360 365
 Val Val Phe Pro Ser Phe Gly Glu Arg Tyr Leu Ser Ser Val Leu Tyr
 370 375 380
 Gln Ser Ile Arg Glu Glu Cys Glu Asn Met Gln Pro Glu Pro
 385 390 395

<210> 63
 <211> 1522
 <212> DNA
 <213> *Oryza sativa*

<400> 63
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 aagatggcgt cgtggtcgtc gcccgtcgcc gccgccgct tgcaggtcca ttctgggtcc 120
 tcctgcttct tctccgcccg atcgccacga cagaccctcc tcctaccacc tctcgcccg 180
 aaccctacac tgaccatcca gcccggcccc catcccttcc ggaacatcaa ctctcctcc 240
 tcctccagct ggatgtgccca cgccgtcgcc gccgaggtcg agggcctcaa catcgccgac 300
 gacgtcacc agctcatcgg caagactcca atggtatata tcaacaacat cgtcaaggga 360
 tgtgttgcca atgtcgctgc taagctcgag attatggagc cctgttgagc tgtcaaggac 420
 aggataggat acagtatgat ttctgatgag gaagagaaag gcttgataac tcctggaaa 480
 agtgttttgg tggaaaccaac aagtggaaat acaggcattg gtcttgccct cattgctgct 540
 tccagaggat ataaattaat attgaccatg cctgcatcaa tgagcatgga gagaagagtt 600
 ctactcaaag cttttggcgc tgaacttgct cttactgatg ccgcaaaagg gatgaagggg 660
 gctgtagata aggctacaga gattttaaat aagacacctg atgcctatat gctgcagcag 720
 tttgacaacc ctgccaaacc aaaggtacat tatgagacta ctgggccaga aatctgggag 780

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gattctaaag ggaaggtgga tgtattcatt ggtggaattg gaacaggtgg aacaatatct 840
ggtgctggcc gtttcctgaa agagaaaaat cctggaatta aggttattgg tattgagcct 900
tctgagagta acatactctc tgggtgaaaa cctggcccac ataagattca aggcattggg 960
gcaggatttg ttccaaggaa cttggatagt gaagttctcg atgaagtgat tgagatatct 1020
agtgatgagg ctgttgagac agcaaagcaa ttggctcttc aggaaggatt actggttggg 1080
atttcatctg gggcagcagc agcagctgcc attaaagttg caaaaagacc agaaaatgct 1140
ggaaagttgg tagtggttgt gtttccaagc tttggtgaga ggtacctttc atctatcctt 1200
tttcagtcga taagagaaga atgtgagaag ttgcaacctg aaccatgagc ctaacttcag 1260
tgttcacaac atcataattg tttctgagat ttctggccat tagttttttt ttctgagaag 1320
tatcatacca ctccatagct gtttgttcga taaataaaaac agttaccttt gcacttataa 1380
tgaggcttgt gaggggtactg tgaaatttct ctgaacatct tctactcttc tcttttatcc 1440
ttaaataaat ctgggagcag tttgtaatac atacgtaaat ttaaagctgg gtggttggta 1500
attgtaaaaa aaaaaaaaaa aa 1522

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<210> 64
<211> 415
<212> PRT
<213> Oryza sativa

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<400> 64

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Ala Arg Gly Ser Asn Tyr Gly Thr Thr Pro Leu Ser Asn Thr Ser Glu
 1             5             10             15

Ser Glu Gln Arg Lys Met Ala Ser Trp Ser Ser Pro Val Ala Ala Ala
      20             25             30

Ala Leu Gln Val His Phe Gly Ser Ser Cys Phe Phe Ser Ala Arg Ser
      35             40             45

Pro Arg Gln Thr Leu Leu Leu Pro Pro Leu Ala Arg Asn Pro Thr Leu
      50             55             60

Thr Ile Gln Pro Arg Pro His Pro Phe Arg Asn Ile Asn Ser Ser Ser
      65             70             75             80

Ser Ser Ser Trp Met Cys His Ala Val Ala Ala Glu Val Glu Gly Leu
      85             90             95

Asn Ile Ala Asp Asp Val Thr Gln Leu Ile Gly Lys Thr Pro Met Val
      100            105            110

Tyr Leu Asn Asn Ile Val Lys Gly Cys Val Ala Asn Val Ala Ala Lys
      115            120            125

Leu Glu Ile Met Glu Pro Cys Cys Ser Val Lys Asp Arg Ile Gly Tyr
      130            135            140

Ser Met Ile Ser Asp Ala Glu Glu Lys Gly Leu Ile Thr Pro Gly Lys
      145            150            155            160

Ser Val Leu Val Glu Pro Thr Ser Gly Asn Thr Gly Ile Gly Leu Ala
      165            170            175

Phe Ile Ala Ala Ser Arg Gly Tyr Lys Leu Ile Leu Thr Met Pro Ala
      180            185            190

Ser Met Ser Met Glu Arg Arg Val Leu Leu Lys Ala Phe Gly Ala Glu
      195            200            205

Leu Val Leu Thr Asp Ala Ala Lys Gly Met Lys Gly Ala Val Asp Lys
      210            215            220

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Ala Thr Glu Ile Leu Asn Lys Thr Pro Asp Ala Tyr Met Leu Gln Gln
 225 230 235 240
 Phe Asp Asn Pro Ala Asn Pro Lys Val His Tyr Glu Thr Thr Gly Pro
 245 250 255
 Glu Ile Trp Glu Asp Ser Lys Gly Lys Val Asp Val Phe Ile Gly Gly
 260 265 270
 Ile Gly Thr Gly Gly Thr Ile Ser Gly Ala Gly Arg Phe Leu Lys Glu
 275 280 285
 Lys Asn Pro Gly Ile Lys Val Ile Gly Ile Glu Pro Ser Glu Ser Asn
 290 295 300
 Ile Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln Gly Ile Gly
 305 310 315 320
 Ala Gly Phe Val Pro Arg Asn Leu Asp Ser Glu Val Leu Asp Glu Val
 325 330 335
 Ile Glu Ile Ser Ser Asp Glu Ala Val Glu Thr Ala Lys Gln Leu Ala
 340 345 350
 Leu Gln Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala Ala Ala Ala
 355 360 365
 Ala Ala Ile Lys Val Ala Lys Arg Pro Glu Asn Ala Gly Lys Leu Val
 370 375 380
 Val Val Val Phe Pro Ser Phe Gly Glu Arg Tyr Leu Ser Ser Ile Leu
 385 390 395 400
 Phe Gln Ser Ile Arg Glu Glu Cys Glu Lys Leu Gln Pro Glu Pro
 405 410 415

<210> 65
 <211> 383
 <212> PRT
 <213> Spinacia oleracea

<400> 65
 Met Ala Ser Leu Val Asn Asn Ala Tyr Ala Ala Ile Arg Thr Ser Lys
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 Leu Glu Leu Arg Glu Val Lys Asn Leu Ala Asn Phe Arg Val Gly Pro
 20 25 30
 Pro Ser Ser Leu Ser Cys Asn Asn Phe Lys Lys Val Ser Ser Ser Pro
 35 40 45
 Ile Thr Cys Lys Ala Val Ser Leu Ser Pro Pro Ser Thr Ile Glu Gly
 50 55 60
 Leu Asn Ile Ala Glu Asp Val Ser Gln Leu Ile Gly Lys Thr Pro Met
 65 70 75 80
 Val Tyr Leu Asn Asn Val Ser Lys Gly Ser Val Ala Asn Ile Ala Ala
 85 90 95

Lys Leu Glu Ser Met Glu Pro Cys Cys Ser Val Lys Asp Arg Ile Gly
 100 105 110
 Tyr Ser Met Ile Asp Asp Ala Glu Gln Lys Gly Val Ile Thr Pro Gly
 115 120 125
 Lys Thr Thr Leu Val Glu Pro Thr Ser Gly Asn Thr Gly Ile Gly Leu
 130 135 140
 Ala Phe Ile Ala Ala Ala Arg Gly Tyr Lys Ile Thr Leu Thr Met Pro
 145 150 155 160
 Ala Ser Met Ser Met Glu Arg Arg Val Ile Leu Lys Ala Phe Gly Ala
 165 170 175
 Glu Leu Val Leu Thr Asp Pro Ala Lys Gly Met Lys Gly Ala Val Glu
 180 185 190
 Lys Ala Glu Glu Ile Leu Lys Lys Thr Pro Asp Ser Tyr Met Leu Gln
 195 200 205
 Gln Phe Asp Asn Pro Ala Asn Pro Lys Ile His Tyr Glu Thr Thr Gly
 210 215 220
 Pro Glu Ile Trp Glu Asp Thr Lys Gly Lys Val Asp Ile Phe Val Ala
 225 230 235 240
 Gly Ile Gly Thr Gly Gly Thr Ile Ser Gly Val Gly Arg Tyr Leu Lys
 245 250 255
 Glu Arg Asn Pro Gly Val Gln Val Ile Gly Ile Glu Pro Thr Glu Ser
 260 265 270
 Asn Ile Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln Gly Leu
 275 280 285
 Gly Ala Gly Phe Val Pro Ser Asn Leu Asp Leu Gly Val Met Asp Glu
 290 295 300
 Val Ile Glu Val Ser Ser Glu Glu Ala Val Glu Met Ala Lys Gln Leu
 305 310 315 320
 Ala Met Lys Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala Ala Ala
 325 330 335
 Ala Ala Ala Val Arg Ile Gly Lys Arg Pro Glu Asn Ala Gly Lys Leu
 340 345 350
 Ile Ala Val Val Phe Pro Ser Phe Gly Glu Arg Tyr Leu Ser Ser Ile
 355 360 365
 Leu Phe Gln Ser Ile Arg Glu Glu Cys Glu Asn Met Lys Pro Glu
 370 375 380
 <210> 66
 <211> 386
 <212> PRT
 <213> Solanum tuberosum
 <400> 66
 Met Ala Ser Phe Ile Asn Asn Pro Leu Thr Ser Leu Cys Asn Thr Lys

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Ser Glu Arg Asn Asn Leu Phe Lys Ile Ser Leu Tyr Glu Ala Gln Ser | 20 | 25 | 30 |
| Leu Gly Phe Ser Lys Leu Asn Gly Ser Arg Lys Val Ala Phe Pro Ser | 35 | 40 | 45 |
| Val Val Cys Lys Ala Val Ser Val Pro Thr Lys Ser Ser Thr Glu Ile | 50 | 55 | 60 |
| Glu Gly Leu Asn Ile Ala Glu Asp Val Thr Gln Leu Ile Gly Asn Thr | 65 | 70 | 75 |
| Pro Met Val Tyr Leu Asn Thr Ile Ala Lys Gly Cys Val Ala Asn Ile | 85 | 90 | 95 |
| Ala Ala Lys Leu Glu Ile Met Glu Pro Cys Cys Ser Val Lys Asp Arg | 100 | 105 | 110 |
| Ile Gly Phe Ser Met Ile Val Asp Ala Glu Glu Lys Gly Leu Ile Ser | 115 | 120 | 125 |
| Pro Gly Lys Thr Val Leu Val Glu Pro Thr Ser Gly Asn Thr Gly Ile | 130 | 135 | 140 |
| Gly Leu Ala Phe Ile Ala Ala Ser Arg Gly Tyr Lys Leu Ile Leu Thr | 145 | 150 | 155 |
| Met Pro Ala Ser Met Ser Leu Glu Arg Arg Val Ile Leu Lys Ala Phe | 165 | 170 | 175 |
| Gly Ala Glu Leu Val Leu Thr Asp Pro Ala Lys Gly Met Lys Gly Ala | 180 | 185 | 190 |
| Val Ser Lys Ala Glu Glu Ile Leu Asn Asn Thr Pro Asp Ala Tyr Ile | 195 | 200 | 205 |
| Leu Gln Gln Phe Asp Asn Pro Ala Asn Pro Lys Ile His Tyr Glu Thr | 210 | 215 | 220 |
| Thr Gly Pro Glu Ile Trp Glu Asp Thr Lys Gly Lys Ile Asp Ile Leu | 225 | 230 | 235 |
| Val Ala Gly Ile Gly Thr Gly Gly Thr Ile Thr Gly Thr Gly Arg Phe | 245 | 250 | 255 |
| Leu Lys Glu Gln Asn Pro Asn Ile Lys Ile Ile Gly Val Glu Pro Thr | 260 | 265 | 270 |
| Glu Ser Asn Val Leu Ser Gly Gly Lys Pro Gly Pro His Lys Ile Gln | 275 | 280 | 285 |
| Gly Ile Gly Ala Gly Phe Ile Pro Gly Asn Leu Asp Gln Asp Val Met | 290 | 295 | 300 |
| Asp Glu Val Ile Glu Ile Ser Ser Asp Glu Ala Val Glu Thr Ala Arg | 305 | 310 | 315 |
| Thr Leu Ala Leu Gln Glu Gly Leu Leu Val Gly Ile Ser Ser Gly Ala | 325 | 330 | 335 |

Ala Ala Leu Ala Ala Ile Gln Val Gly Lys Arg Pro Glu Asn Ala Gly
 340 345 350

Lys Leu Ile Gly Val Val Phe Pro Ser Tyr Gly Glu Arg Tyr Leu Ser
 355 360 365

Ser Ile Leu Phe Gln Ser Ile Arg Glu Glu Cys Glu Lys Met Lys Pro
 370 375 380

Glu Leu
 385

<210> 67
 <211> 1581
 <212> DNA
 <213> Zea mays

<400> 67
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 tctcgctatt ccgacgcatt gctgggcgct cgctgacggt gatcgaggc gcctccggcg 240
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 ctggtgagga catatatggt ggttctgac gtctactctc gcaagttgtg ccaagaaatg 660
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<400> 68
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 35 40 45

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Arg | Ser | Leu | Thr | Val | Ile | Ala | Gly | Ala | Ser | Gly | Gly | Ser | Glu | 50 | 55 | 60 | |
| Arg | Asp | Leu | Ser | Ala | Ser | Ala | Val | Ser | Val | Glu | Ala | Leu | Asp | Ser | Val | 65 | 70 | 75 | 80 |
| Ala | Ser | Asp | Ser | Asp | Leu | Glu | Thr | Lys | Glu | Pro | Ser | Val | Ser | Thr | Met | 85 | 90 | 95 | |
| Leu | Thr | Ser | Phe | Glu | Asn | Ser | Phe | Asp | Lys | Tyr | Gly | Ala | Leu | Ser | Thr | 100 | 105 | 110 | |
| Pro | Leu | Tyr | Gln | Thr | Ala | Thr | Phe | Lys | Gln | Pro | Ser | Ala | Thr | Asp | Tyr | 115 | 120 | 125 | |
| Gly | Thr | Tyr | Asp | Tyr | Thr | Arg | Ser | Gly | Asn | Pro | Thr | Arg | Asp | Val | Leu | 130 | 135 | 140 | |
| Gln | Ser | Leu | Met | Ala | Lys | Leu | Glu | Lys | Ala | Asp | Gln | Ala | Phe | Cys | Phe | 145 | 150 | 155 | 160 |
| Thr | Ser | Gly | Met | Ala | Ala | Leu | Ala | Ala | Val | Lys | His | Leu | Leu | Gln | Ala | 165 | 170 | 175 | |
| Gly | Gln | Glu | Ile | Val | Ala | Gly | Glu | Asp | Ile | Tyr | Gly | Gly | Ser | Asp | Arg | 180 | 185 | 190 | |
| Leu | Leu | Ser | Gln | Val | Val | Pro | Arg | Asn | Gly | Ile | Val | Val | Lys | Arg | Val | 195 | 200 | 205 | |
| Asp | Thr | Thr | Lys | Ile | Ser | Asp | Val | Val | Ser | Ala | Ile | Gly | Pro | Ser | Thr | 210 | 215 | 220 | |
| Arg | Leu | Val | Trp | Leu | Glu | Ser | Pro | Thr | Asn | Pro | Arg | Gln | Gln | Ile | Thr | 225 | 230 | 235 | 240 |
| Asp | Ile | Lys | Thr | Ile | Ser | Glu | Ile | Ala | His | Ser | His | Gly | Ala | Leu | Val | 245 | 250 | 255 | |
| Leu | Val | Asp | Asn | Ser | Ile | Met | Ser | Pro | Val | Leu | Ser | Arg | Pro | Ile | Glu | 260 | 265 | 270 | |
| Leu | Gly | Ala | Asp | Ile | Val | Met | His | Ser | Ala | Thr | Lys | Phe | Ile | Ala | Gly | 275 | 280 | 285 | |
| His | Ser | Asp | Leu | Met | Ala | Gly | Ile | Leu | Ala | Val | Lys | Gly | Glu | Ser | Leu | 290 | 295 | 300 | |
| Ala | Lys | Glu | Val | Gly | Phe | Leu | Gln | Asn | Ala | Glu | Gly | Ser | Gly | Leu | Ala | 305 | 310 | 315 | 320 |
| Pro | Phe | Asp | Cys | Trp | Leu | Cys | Leu | Arg | Gly | Ile | Lys | Thr | Met | Ala | Leu | 325 | 330 | 335 | |
| Arg | Val | Glu | Lys | Gln | Gln | Ala | Asn | Ala | Gln | Lys | Ile | Ala | Glu | Phe | Leu | 340 | 345 | 350 | |
| Ala | Ser | His | Pro | Arg | Val | Lys | Gln | Val | Asn | Tyr | Ala | Gly | Leu | Pro | Asp | 355 | 360 | 365 | |

His Pro Gly Arg Ala Leu His Tyr Ser Gln Ala Lys Gly Ala Gly Ser
 370 375 380
 Val Leu Ser Phe Leu Thr Gly Ser Leu Ala Leu Ser Lys His Val Val
 385 390 395 400
 Glu Thr Thr Lys Tyr Phe Ser Val Thr Val Ser Phe Gly Ser Val Lys
 405 410 415
 Ser Leu Ile Ser Leu Pro Cys Phe Met Ser His Ala Ser Ile Pro Ala
 420 425 430
 Ser Val Arg Glu Glu Arg Gly Leu Thr Asp Asp Leu Val Arg Ile Ser
 435 440 445
 Val Gly Ile Glu Asp Val Glu Asp Leu Ile Ala Asp Leu Asp Arg Ala
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 <212> DNA
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<210> 70
 <211> 476
 <212> PRT
 <213> *Oryza sativa*

<400> 70

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ser | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Ile | Pro | Thr | Ser | |
| 1 | | | | 5 | | | | | 10 | | | | | | 15 | |
| Leu | Gly | Arg | Leu | Phe | His | Leu | Arg | Pro | Thr | Pro | Asn | Pro | Ser | Arg | Asn | |
| | | | 20 | | | | | 25 | | | | | | 30 | | |
| Leu | Ser | Gly | Ser | Ser | Ala | Gln | Pro | Leu | Leu | Arg | Leu | Ser | Tyr | His | Pro | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| Arg | Leu | Thr | Leu | Ser | Arg | Arg | Met | Glu | Ala | Pro | Ala | Ala | Ile | Ala | Asp | |
| | 50 | | | | | 55 | | | | | 60 | | | | | |
| Ser | His | Gly | Gly | Gly | Asp | Leu | Ser | Ala | Ser | Ala | Val | Gly | Ala | Glu | Ala | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| Leu | Gly | Ala | Val | Ala | Ala | Pro | Asp | Phe | Asp | Val | Glu | Met | Lys | Glu | Pro | |
| | | | | 85 | | | | | 90 | | | | | | 95 | |
| Ser | Val | Ala | Thr | Ile | Leu | Thr | Ser | Phe | Glu | Asn | Ser | Phe | Asp | Gly | Phe | |
| | | | 100 | | | | | 105 | | | | | | 110 | | |
| Gly | Ser | Met | Ser | Thr | Pro | Leu | Tyr | Gln | Thr | Ala | Thr | Phe | Lys | Gln | Pro | |
| | | 115 | | | | | 120 | | | | | | 125 | | | |
| Ser | Ala | Thr | Asp | Asn | Gly | Pro | Tyr | Asp | Tyr | Thr | Arg | Ser | Gly | Asn | Pro | |
| | 130 | | | | | 135 | | | | | 140 | | | | | |
| Thr | Arg | Asp | Val | Leu | Gln | Ser | Leu | Met | Ala | Lys | Leu | Glu | Lys | Ala | Asp | |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| Gln | Ala | Phe | Cys | Phe | Thr | Ser | Gly | Met | Ala | Ala | Leu | Ala | Ala | Val | Thr | |
| | | | | 165 | | | | | 170 | | | | | | 175 | |
| His | Leu | Leu | Lys | Ser | Gly | Gln | Glu | Ile | Val | Ala | Gly | Glu | Asp | Ile | Tyr | |
| | | | 180 | | | | | 185 | | | | | | 190 | | |
| Gly | Gly | Ser | Asp | Arg | Leu | Leu | Ser | Gln | Val | Ala | Pro | Arg | His | Gly | Ile | |
| | | 195 | | | | | 200 | | | | | | 205 | | | |
| Val | Val | Lys | Arg | Ile | Asp | Thr | Thr | Lys | Ile | Ser | Glu | Val | Thr | Ser | Ala | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Ile | Gly | Pro | Leu | Thr | Lys | Leu | Val | Trp | Leu | Glu | Ser | Pro | Thr | Asn | Pro | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Arg | Leu | Gln | Ile | Thr | Asp | Ile | Lys | Lys | Ile | Ala | Glu | Ile | Ala | His | Tyr | |
| | | | | 245 | | | | | 250 | | | | | 255 | | |
| His | Gly | Ala | Leu | Val | Leu | Val | Asp | Asn | Ser | Ile | Met | Ser | Pro | Val | Leu | |
| | | | 260 | | | | | 265 | | | | | | 270 | | |
| Ser | Arg | Pro | Leu | Glu | Leu | Gly | Ala | Asp | Ile | Val | Met | His | Ser | Ala | Thr | |
| | | 275 | | | | | 280 | | | | | | 285 | | | |
| Lys | Phe | Ile | Ala | Gly | His | Ser | Asp | Leu | Met | Ala | Gly | Ile | Leu | Ala | Val | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| Lys | Gly | Glu | Ser | Ser | Leu | Ala | Lys | Glu | Ile | Ala | Phe | Leu | Gln | Asn | Ala | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |


```

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aaaaaaaaaa aaaaaaaaaa                                     1699

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<212> PRT
<213> Triticum aestivum

```

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Lys Tyr Gly Ala Leu Ser Thr Pro Leu Tyr Gln Thr Ala Thr Phe Lys
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Gln Pro Ser Ala Thr Val Asn Gly Ala Tyr Asp Tyr Thr Arg Ser Gly
          35              40              45

Asn Pro Thr Arg Asp Val Leu Gln Ser Leu Met Ala Lys Leu Glu Lys
          50              55              60

Ala Asp Gln Ala Phe Cys Phe Thr Ser Gly Met Ala Ser Leu Ala Ala
          65              70              75              80

Val Thr His Leu Leu Gln Ala Gly Gln Glu Ile Val Ala Gly Glu Asp
          85              90              95

Ile Tyr Gly Gly Ser Asp Arg Leu Leu Ser Gln Val Val Pro Arg Asn
          100             105             110

Gly Ile Val Val Lys Arg Val Asp Thr Thr Lys Ile Asn Asp Val Thr
          115             120             125

Ala Ala Ile Gly Pro Leu Thr Arg Leu Val Trp Leu Glu Ser Pro Thr
          130             135             140

Asn Pro Arg Gln Gln Ile Thr Asp Ile Lys Lys Ile Ser Glu Ile Ala
          145             150             155             160

His Ser His Gly Ala Leu Val Leu Val Asp Asn Ser Ile Met Ser Pro
          165             170             175

Val Leu Ser Trp Pro Ile Glu Leu Gly Ala Asp Ile Val Met His Ser
          180             185             190

Ala Thr Lys Phe Ile Ala Gly His Ser Asp Leu Met Ala Gly Ile Leu
          195             200             205

Ala Val Lys Gly Glu Ser Leu Ala Lys Glu Ile Ala Phe Leu Gln Asn
          210             215             220

Ala Glu Gly Ser Gly Leu Ala Pro Phe Asp Cys Trp Leu Cys Leu Arg
          225             230             235             240

Gly Ile Lys Thr Met Ala Leu Arg Val Glu Lys Gln Gln Asp Asn Ala
          245             250             255

Gln Lys Ile Ala Glu Phe Leu Ala Ser His Pro Arg Val Lys Gln Val

```

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 260 | | | | | | | 265 | | | | | 270 | | | | | |
| Asn | Tyr | Ala | Gly | Leu | Pro | Asp | His | Pro | Gly | Arg | Ser | Leu | His | Tyr | Ser | | |
| 275 | | | | | | | 280 | | | | | 285 | | | | | |
| Gln | Ala | Lys | Gly | Ala | Gly | Ser | Val | Leu | Ser | Phe | Gln | Thr | Gly | Ser | Leu | | |
| 290 | | | | | | | 295 | | | | | 300 | | | | | |
| Ser | Leu | Ser | Lys | His | Val | Val | Glu | Thr | Thr | Lys | Tyr | Phe | Asn | Val | Thr | | |
| 305 | | | | | | | 310 | | | | | 315 | | | | 320 | |
| Val | Ser | Phe | Gly | Ser | Val | Lys | Ser | Leu | Ile | Ser | Leu | Pro | Cys | Phe | Met | | |
| 325 | | | | | | | 330 | | | | | 335 | | | | | |
| Ser | His | Ala | Ser | Ile | Pro | Ser | Ser | Val | Arg | Glu | Glu | Arg | Gly | Leu | Thr | | |
| 340 | | | | | | | 345 | | | | | 350 | | | | | |
| Asp | Asp | Leu | Val | Arg | Ile | Ser | Val | Gly | Ile | Glu | Asp | Val | Asp | Asp | Leu | | |
| 355 | | | | | | | 360 | | | | | 365 | | | | | |
| Ile | Ala | Asp | Leu | Asp | Tyr | Ala | Leu | Arg | Ser | Gly | Pro | Ala | | | | | |
| 370 | | | | | | | 375 | | | | | 380 | | | | | |